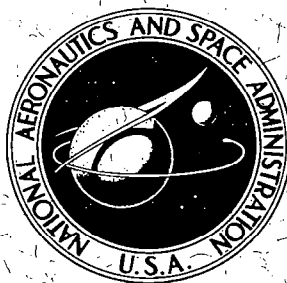


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TEMPERATURE, PRESSURE, DENSITY,
AND WIND MEASUREMENTS IN THE
STRATOSPHERE AND MESOSPHERE, 1968

by

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Globe Universal Sciences
and

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University of Michigan



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ABSTRACT

Complete data from a total of 36 rocket soundings conducted during 1968 from Wallops Island, Virginia; Churchill, Canada; Barrow, Alaska; Natal, Brazil; and Arecibo, Puerto Rico are presented. Temperature, pressure, density, and wind profiles from 30 acoustic grenade experiments and temperature, pressure, and density profiles from 6 pitot probe experiments covering the altitude range of approximately 30 to 90 km are tabulated. No attempt has been made here to analyze the meteorological significance of these data. The results of error analyses for each of the 30 acoustic grenade soundings have been included also.

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INTRODUCTION

During 1968, 30 acoustic grenade and 6 pitot probe experiments were conducted by the Goddard Space Flight Center and the University of Michigan under contract to Goddard. Launch sites included: Barrow, Alaska (71°N); Churchill, Canada (59°N); Wallops Island, Virginia (38°N); Arecibo, Puerto Rico (18°N); and Natal, Brazil (6°S). These soundings were carried out as part of the Meteorological Sounding Rocket Program, a primary objective of which is to observe the structure of the upper stratosphere, mesosphere, and lower thermosphere, and to investigate specific phenomena which occur in these regions. In order to extend the coverage over the widest possible geographic area and to permit more accurate analyses, the GSFC soundings are coordinated with soundings in other parts of the world whenever possible. Since the data obtained from these soundings are published here to serve as a basis for further investigation and interpretation of the structure of the upper atmosphere, no analysis of their meteorological significance is attempted.

EXPERIMENTAL TECHNIQUES

The acoustic grenade and pitot probe techniques were employed to obtain the data reported here. These techniques are described only briefly since the details of the theory, instrumentation, and data reduction have been published elsewhere (References 1, 2, and 3).

In the grenade experiment, 1, 2, and 3 pound explosive charges (grenades) are carried aloft in the nose cone of a Nike-Cajun sounding rocket. The grenades are ejected and detonated at 2 to 4 km intervals. The payload carries 19 grenades, permitting an average vertical resolution in the data

of 3 km. The position of the rocket and therefore of each explosion is determined by a Doppler tracking system, a high precision radar such as the FPQ-6, or both. The time of each explosion is detected by sensors in the payload and telemetered to the ground. A ground-based array of hot-wire microphones capable of responding to frequencies in the 4 hertz range is used to detect and record the arrivals of the sound waves generated by the exploding grenades. The measured experimental parameters are the times and positions of the grenade explosions and the arrival times of the sound waves at the ground-based microphones.

The elevation and azimuth angles of the normal to each arriving spherical sound wave are computed by applying a least-squares-fit to the arrival times at the various microphones. Each wave is then analytically traced along its path of propagation through the atmosphere by using Snell's Law. Data from balloonsondes and rocketsondes obtained near the time of the grenade sounding are introduced to account for the influence of wind and temperature in retracing the path of the sound wave from the ground to the first explosion; above this altitude, the results of the experiment itself are used for each succeeding explosion. The origin of the sound wave as determined by tracing is compared with the known position of the explosion and the horizontal difference by which the sound wave has been displaced from one explosion to the next is a measure of the average wind velocity vector in the layer bounded by the two explosions. The average speed of sound and hence the average temperature of the atmosphere between two adjacent explosions may also be determined. The temperature and wind profiles consist of discrete points, each representing the average temperature and average wind, respectively, of the vertical layers between consecutive explosions. The pressure profile is derived from the temperature profile, using the pressure measured by an accompanying balloonsonde as a reference value. Pressure is calculated from the barometric equation (a form of the hydrostatic equation) by integrating the pressure upward over the temperature profile. The density is then calculated from the temperature and pressure using the equation of state (Reference 4).

In the pitot probe experiment, a radioactive ionization gage and a hot filament gage, which are mounted in the forward tip of the payload measure impact pressure, which is related to ambient density, as the rocket ascends. The gage outputs are telemetered to ground-based receiving and recording equipment. The trajectory of the rocket is provided by Doppler tracking, radar tracking, or both, to determine the altitude and velocity of the rocket. The measured experimental parameters are ram pressure, velocity, position, and orientation of the payload. Ram pressure is related to density by the Rayleigh equation and the equation of state in the continuum region, and by a modified thermal transpiration equation in the free-molecular flow region. The temperature profile is computed from the density profile by integrating the density profile using a form of the hydrostatic equation.

RESULTS

The launch sites of Barrow, Alaska (71°N); Churchill, Canada (59°N); Wallops Island, Virginia (38°N); and Natal, Brazil (6°S) were chosen because they represent arctic, sub-arctic, temperate, and tropical locations, respectively. Table 1 summarizes the date, time, and location of each of

Table 1
Summary of 1968 Soundings.

Figure	Date	Time (GMT)	Location	Experiment
1	1 February	1853	Wallops	Grenade
2	1 February	1900	Churchill	Grenade
3	1 February	1930	Churchill	Grenade
4	1 February	2030	Churchill	Grenade
5	1 February	2115	Churchill	Grenade
6	5 February	2222	Churchill	Grenade
7	17 March	0659	Arecibo	Pitot
8	17 March	1845	Arecibo	Pitot
9	18 March	0700	Arecibo	Pitot
10	24 March	1804	Natal	Grenade
11	25 March	0600	Natal	Grenade
12	25 March	1800	Natal	Grenade
13	24 July	0046	Wallops	Grenade
14	24 July	1020	Wallops	Grenade
15	24 July	2155	Wallops	Grenade
16	8 August	1935	Wallops	Pitot
17	9 August	0724	Wallops	Pitot
18	16 September	1712	Wallops	Grenade
19	17 September	2003	Barrow	Grenade
20	27 September	2345	Churchill	Grenade
21	14 October	0100	Barrow	Grenade
22	14 October	0300	Barrow	Grenade
23	15 October	2212	Churchill	Grenade
24	16 October	0012	Churchill	Grenade
25	19 November	1800	Wallops	Grenade
26	19 November	2005	Wallops	Pitot
27	20 November	1124	Churchill	Grenade
28	20 November	1324	Churchill	Grenade
29	22 November	0031	Barrow	Grenade
30	22 November	0755	Barrow	Grenade
31	12 December	2108	Wallops	Grenade
32	12 December	2308	Wallops	Grenade
33	13 December	0311	Churchill	Grenade
34	13 December	0459	Barrow	Grenade
35	13 December	0511	Churchill	Grenade
36	13 December	0659	Barrow	Grenade

the 30 grenade and 6 pitot probe soundings conducted during 1968. These observations include: a series of closely spaced soundings to explore the short term variability of the winter mesosphere (4 grenade soundings from Churchill); three diurnal series coordinated with other ionospheric rocket-borne measurements (3 pitot soundings from Arecibo, a total of 4 grenade and 3 pitot soundings from Wallops); a series of diurnal soundings designed to study the thermal tides (3 grenade soundings from Natal); and a series of soundings to study the transition in the thermal structure of the mesosphere from summer to winter (7 grenade soundings from Barrow, 7 grenade soundings from Churchill, 4 grenade and 1 pitot soundings from Wallops). Of course, some of the enumerated soundings served more than one objective.

The results of the soundings are given in Figures 1 through 36. In the grenade soundings, the directly measured parameters, temperature and wind are tabulated on the left-hand page. Values of interpolated temperature, computed pressure, pressure deviation from the 1962 U. S. Standard Atmosphere (Reference 5), computed density, and density deviation from the standard atmosphere are tabulated on the right-hand page as functions of geometric altitude. The wind components, interpolated at 2 km intervals, are also tabulated on the left-hand page. The pitot probe results give computed temperature, computed pressure, pressure deviation from standard, measured density, and density deviation from standard. Balloonsonde and rocketsonde observations which accompanied the soundings are also plotted to provide an essentially continuous profile of temperature (and wind) from the surface to the mesopause (Reference 6). In the pitot probe data, where temperature profiles are given for levels well above the mesopause, the temperature is actually the molecular scale temperature, since the mean molecular weight of the atmosphere is not precisely known at these altitudes.

ERROR ANALYSIS

The errors contributing to the inaccuracy of the grenade technique can be classified according to source (Reference 7) as errors inherent in the experimental measurements and errors resulting from approximations made in the course of analysis. The latter consists of errors resulting from the formation of least-squares operational equations, the deviation of the model atmosphere from the true atmosphere, and the finite amplitude propagation correction. These analytical approximations are considered to be second-order effects of negligible quantities or systematic errors that are effectively removed.

Experimental measurement uncertainties are surveying errors in determining the location of each microphone in the array, determination of the grenade burst time and position, and reading the break times for the sound wave as it crosses the array. Of these errors the reading of individual microphone break times contributes the majority of the inaccuracy. (An exception due to grenade burst time and position errors for a large-area sound-ranging array as installed at Wallops is discussed in Reference 8.)

Measurement of the break time for the wave from a grenade explosion on more than three microphones in the array produces an over-determined sound-ranging solution. A least-squares analysis using this solution yields the standard error of the direction cosines and the travel time for the wave from each grenade. These standard errors of surface values can be propagated through the ray-tracing analysis to yield standard errors in the computed values of temperature and winds for each grenade pair layer (Reference 7).

In cases where an over-determined solution was not available (an array of three microphone break times), standard errors could not be determined and no errors were computed for temperature and winds. Such instances are denoted as zero error in the tabulations.

The pressure and density values which are tabulated for each grenade experiment do not include the effects of the temperature errors. The calculation of such errors can be made by introducing the stated temperature errors into the barometric equation, an exercise left to the reader.

The experimental errors included in the measurement of density by the pitot probe technique are estimated as follows: ± 1 percent below 84 km altitude; ± 4 percent between 84 and 100 km altitude; and ± 10 percent above 100 km altitude.

ACKNOWLEDGMENTS

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National Aeronautics and Space Administration
Greenbelt, Maryland, March 31, 1970
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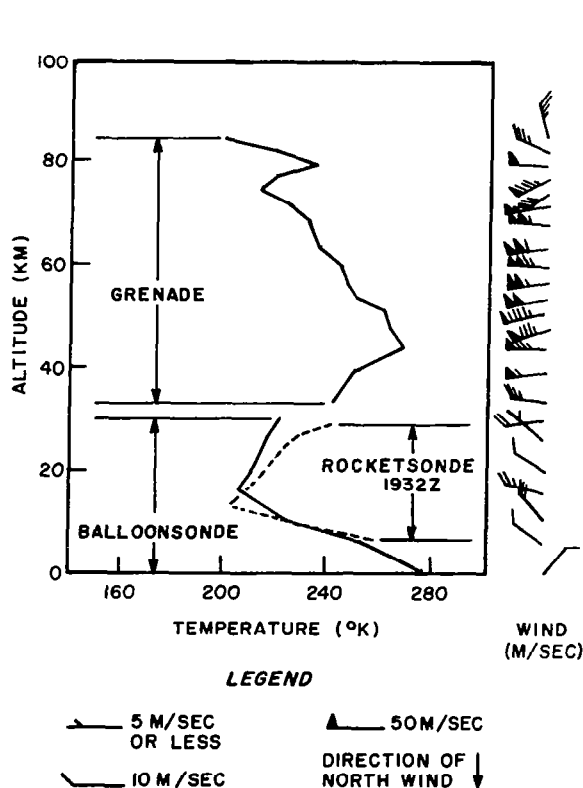
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FIGURE 1

WALLOPS, 1 FEBRUARY 1968, 1853 GMT.

ALTITUDE M MSL	TEMPERATURE DEG K	ERROR DEG K	WIND SPEED M/SEC	ERROR M/SEC	WIND DIRECTION DEGREES	ERROR DEG
33298.9	241.5	0.6	34.0	0.4	279.0	1.6
39045.2	249.9	0.5	54.9	0.5	262.6	1.1
44002.4	268.7	0.6	75.1	0.8	270.0	1.2
47715.6	263.1	0.7	83.8	1.1	250.2	1.4
50800.8	261.4	0.7	95.8	1.0	255.6	1.2
53801.6	250.7	0.7	100.2	1.1	258.9	1.3
56698.8	246.7	0.8	104.9	1.3	262.4	1.5
59970.2	244.7	0.6	113.8	1.1	272.3	1.0
63994.5	234.9	0.4	111.1	0.8	262.1	0.8
67826.9	232.0	0.8	104.7	1.6	274.2	1.5
71067.3	224.0	0.8	53.6	1.6	260.6	3.5
74177.2	212.3	0.9	40.7	2.8	233.0	4.9
76782.8	218.0	1.3	84.5	3.4	242.6	3.7
79233.8	232.0	1.1	47.8	2.3	271.9	5.3
81582.4	217.0	2.1	34.2	6.0	293.3	13.4
84391.6	197.5	0.9	34.0	4.2	345.8	3.4

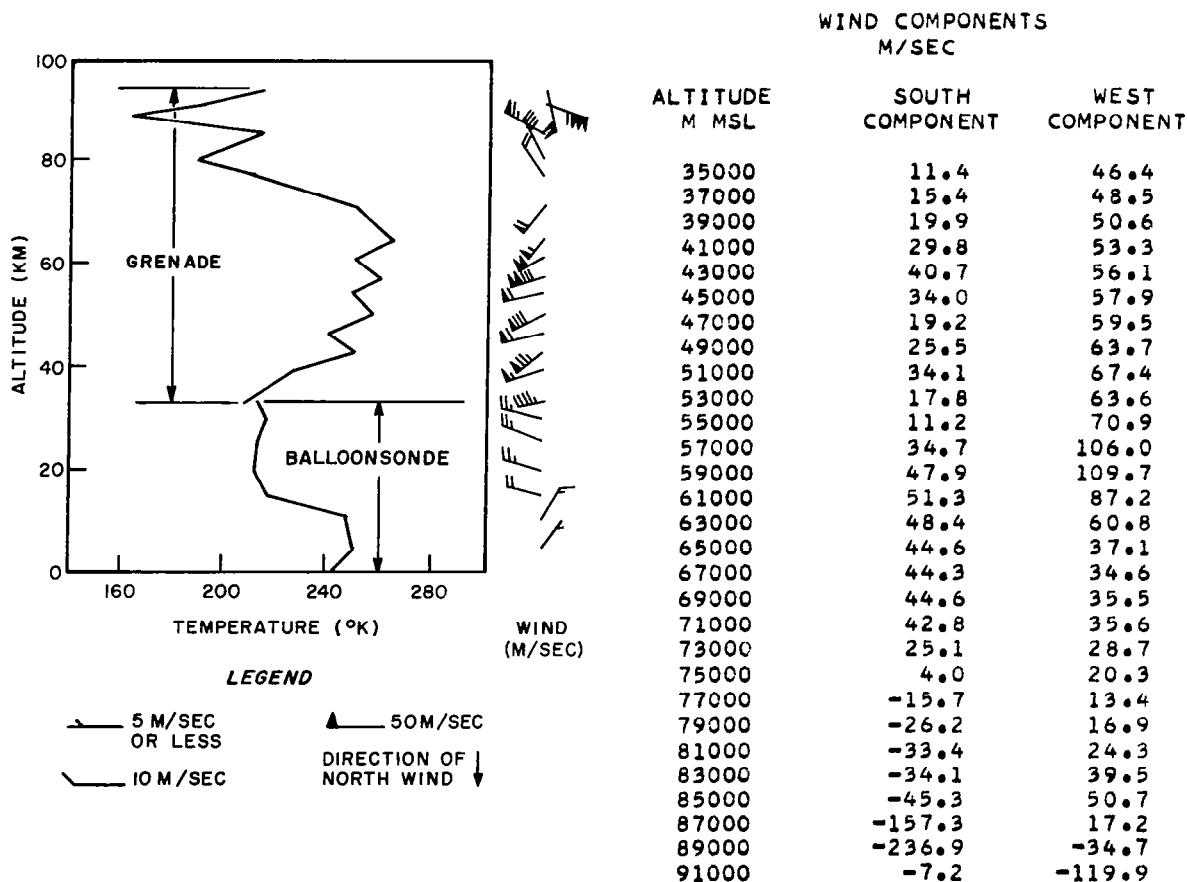


ALTITUDE M MSL	TEMPERATURE DEG K	PRESSURE NT/SQ M	DEVIATION PER CENT	DENSITY KG/CU M	DEVIATION PER CENT
34000	242.5	0.659E 03	-0.5	0.947E-02	-4.1
35000	244.0	0.573E 03	-0.1	0.818E-02	-3.2
36000	245.4	0.498E 03	0.0	0.707E-02	-2.4
37000	245.9	0.435E 03	0.4	0.614E-02	-1.5
38000	248.4	0.380E 03	0.8	0.533E-02	-0.6
39000	249.8	0.332E 03	1.0	0.463E-02	0.1
40000	253.5	0.290E 03	1.1	0.398E-02	-0.1
41000	257.3	0.253E 03	1.0	0.343E-02	-0.6
42000	261.1	0.222E 03	0.9	0.296E-02	-1.1
43000	264.9	0.195E 03	1.4	0.257E-02	-0.9
44000	268.7	0.172E 03	1.9	0.224E-02	-0.8
45000	267.2	0.152E 03	2.2	0.198E-02	1.0
46000	265.7	0.134E 03	2.4	0.176E-02	2.8
47000	264.2	0.118E 03	2.1	0.156E-02	4.2
48000	263.0	0.104E 03	1.8	0.138E-02	4.8
49000	262.4	0.917E 02	1.5	0.121E-02	4.6
50000	261.8	0.806E 02	1.1	0.107E-02	4.5
51000	260.7	0.709E 02	0.7	0.948E-03	4.5
52000	257.1	0.624E 02	0.2	0.845E-03	5.5
53000	253.5	0.546E 02	-0.4	0.751E-03	5.7
54000	250.4	0.478E 02	-1.3	0.665E-03	5.3
55000	249.0	0.418E 02	-2.1	0.585E-03	4.3
56000	247.7	0.365E 02	-2.9	0.513E-03	3.2
57000	246.5	0.318E 02	-3.7	0.450E-03	2.1
58000	245.9	0.278E 02	-4.4	0.394E-03	0.8
59000	245.3	0.242E 02	-5.1	0.344E-03	-0.3
60000	244.6	0.211E 02	-5.7	0.301E-03	-1.4
61000	242.2	0.184E 02	-6.2	0.265E-03	-1.7
62000	239.8	0.160E 02	-6.7	0.233E-03	-2.3
63000	237.3	0.139E 02	-7.4	0.204E-03	-3.6
64000	234.9	0.121E 02	-7.9	0.179E-03	-4.7
65000	234.2	0.104E 02	-8.3	0.156E-03	-6.3
66000	233.4	0.910E 01	-8.4	0.135E-03	-7.6
67000	232.6	0.788E 01	-8.4	0.118E-03	-8.9
68000	231.6	0.682E 01	-8.2	0.102E-03	-9.9
69000	229.1	0.591E 01	-7.8	0.898E-04	-10.1
70000	226.6	0.510E 01	-7.4	0.784E-04	-10.3
71000	224.1	0.439E 01	-7.0	0.683E-04	-10.5
72000	220.5	0.379E 01	-6.4	0.598E-04	-10.0
73000	216.7	0.325E 01	-5.7	0.523E-04	-9.5
74000	213.0	0.278E 01	-5.2	0.455E-04	-9.2
75000	214.1	0.237E 01	-4.4	0.386E-04	-10.7
76000	216.3	0.203E 01	-3.2	0.327E-04	-12.2
77000	219.2	0.174E 01	-1.4	0.277E-04	-13.5
78000	225.0	0.150E 01	0.9	0.232E-04	-15.4
79000	230.7	0.130E 01	4.5	0.196E-04	-16.3
80000	227.1	0.112E 01	8.6	0.172E-04	-13.5
81000	220.7	0.972E 00	12.8	0.153E-04	-7.6
82000	214.1	0.834E 00	16.4	0.135E-04	-1.7
83000	207.2	0.711E 00	19.2	0.119E-04	3.9
84000	200.2	0.601E 00	21.2	0.104E-04	9.3

FIGURE 2

CHURCHILL, 1 FEBRUARY 1968, 1900 GMT.

ALTITUDE M MSL	TEMPERATURE DEG K	ERROR DEG K	WIND SPEED M/SEC	ERROR M/SEC	WIND DIRECTION DEGREES	ERROR DEG
33364.2	209.7	0.6	45.4	1.1	259.6	1.5
39231.5	228.6	1.1	54.5	1.9	248.6	2.0
43673.6	250.9	3.6	72.6	6.8	231.8	4.8
47367.9	240.6	3.8	61.3	7.2	256.0	6.6
50945.6	257.8	2.8	78.7	5.4	240.7	3.6
54448.1	250.8	4.2	60.0	8.3	266.8	7.8
57884.8	259.6	4.9	130.3	10.1	249.4	4.0
61224.4	250.9	3.2	99.9	6.8	238.3	3.5
64986.7	264.9	4.8	55.4	9.6	217.3	9.2
71132.8	249.9	2.3	57.8	5.0	219.1	4.6
77070.3	211.0	2.4	21.3	6.2	326.8	16.8
80804.4	190.3	5.8	40.5	17.1	327.3	24.2
85189.7	215.8	8.1	66.6	22.0	300.8	18.7
88975.3	163.6	17.8	292.8	61.7	5.1	13.2
91372.6	192.6	33.3	161.5	106.1	111.9	41.3
93620.7	214.5	43.3	96.8	142.2	167.9	81.7

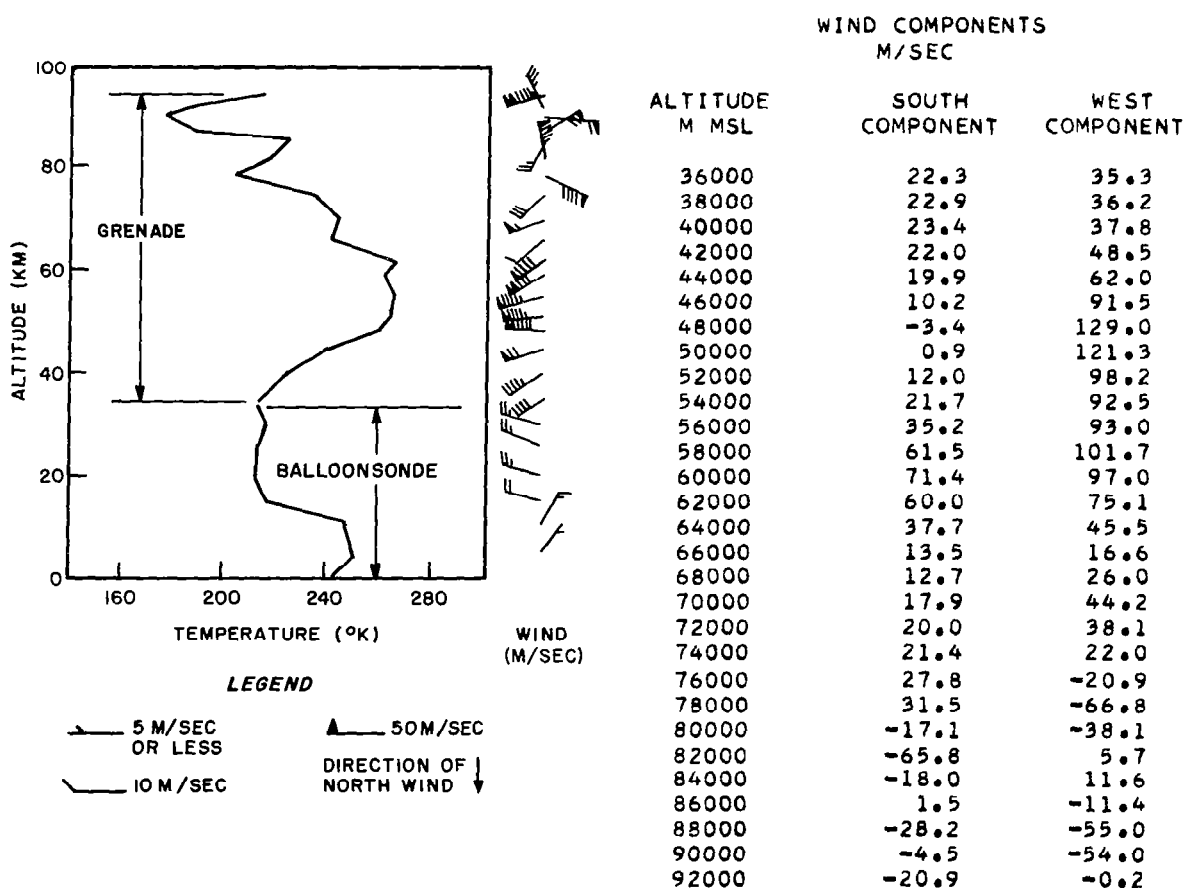


ALTITUDE M MSL	TEMPERATURE DEG K	PRESSURE NT/SQ M	DEVIATION PER CENT	DENSITY KG/CU M	DEVIATION PER CENT
34000	211.7	0.542E 03	-18.2	0.892E-02	-9.7
35000	214.9	0.461E 03	-19.6	0.748E-02	-11.6
36000	218.2	0.392E 03	-21.2	0.626E-02	-13.6
37000	221.4	0.335E 03	-22.4	0.528E-02	-15.2
38000	224.6	0.289E 03	-23.1	0.449E-02	-16.3
39000	227.9	0.249E 03	-23.9	0.381E-02	-17.4
40000	232.5	0.215E 03	-24.9	0.323E-02	-19.1
41000	237.5	0.185E 03	-25.9	0.272E-02	-21.1
42000	242.5	0.160E 03	-26.8	0.231E-02	-22.8
43000	247.5	0.140E 03	-27.1	0.197E-02	-23.8
44000	250.0	0.122E 03	-27.4	0.171E-02	-24.1
45000	247.2	0.107E 03	-27.8	0.151E-02	-22.9
46000	244.4	0.937E 02	-28.5	0.133E-02	-22.0
47000	241.6	0.815E 02	-29.6	0.117E-02	-21.5
48000	243.6	0.708E 02	-30.7	0.101E-02	-23.0
49000	248.4	0.615E 02	-31.8	0.863E-03	-25.7
50000	253.2	0.539E 02	-32.3	0.742E-03	-27.7
51000	257.7	0.473E 02	-32.7	0.640E-03	-29.4
52000	255.7	0.415E 02	-33.1	0.566E-03	-29.3
53000	253.7	0.364E 02	-33.6	0.500E-03	-29.5
54000	251.7	0.318E 02	-34.2	0.441E-03	-30.1
55000	252.2	0.278E 02	-34.8	0.384E-03	-31.3
56000	254.8	0.243E 02	-35.2	0.333E-03	-33.0
57000	257.4	0.214E 02	-35.4	0.289E-03	-34.3
58000	259.3	0.188E 02	-35.4	0.252E-03	-35.3
59000	256.7	0.165E 02	-35.4	0.224E-03	-35.1
60000	254.1	0.144E 02	-35.4	0.198E-03	-35.0
61000	251.4	0.126E 02	-35.6	0.175E-03	-35.0
62000	253.8	0.110E 02	-35.7	0.152E-03	-36.3
63000	257.5	0.971E 01	-35.5	0.131E-03	-38.1
64000	261.2	0.855E 01	-34.9	0.114E-03	-39.4
65000	264.9	0.754E 01	-34.1	0.991E-04	-40.5
66000	262.4	0.664E 01	-33.1	0.882E-04	-40.0
67000	260.0	0.585E 01	-31.9	0.784E-04	-39.4
68000	257.6	0.512E 01	-31.1	0.693E-04	-39.1
69000	255.1	0.448E 01	-30.1	0.612E-04	-38.7
70000	252.7	0.392E 01	-28.9	0.540E-04	-38.2
71000	250.2	0.343E 01	-27.5	0.477E-04	-37.5
72000	244.2	0.300E 01	-25.8	0.428E-04	-35.7
73000	237.7	0.262E 01	-23.9	0.384E-04	-33.4
74000	231.1	0.229E 01	-21.7	0.346E-04	-30.9
75000	224.6	0.201E 01	-19.1	0.312E-04	-28.0
76000	218.0	0.172E 01	-18.1	0.275E-04	-26.3
77000	211.5	0.147E 01	-17.0	0.242E-04	-24.5
78000	205.8	0.125E 01	-15.5	0.212E-04	-22.6
79000	200.3	0.107E 01	-13.8	0.186E-04	-20.6
80000	194.7	0.899E 00	-13.2	0.160E-04	-19.5
81000	191.4	0.754E 00	-12.4	0.137E-04	-17.3
82000	197.2	0.633E 00	-11.6	0.111E-04	-19.1
83000	203.1	0.536E 00	-10.0	0.919E-05	-20.0
84000	208.9	0.459E 00	-7.3	0.765E-05	-19.9
85000	214.7	0.393E 00	-4.5	0.638E-05	-19.7
86000	204.7	0.337E 00	-1.6	0.574E-05	-13.2
87000	190.9	0.289E 00	1.5	0.528E-05	-3.9
88000	177.1	0.244E 00	3.1	0.481E-05	5.2
89000	163.9	0.199E 00	1.1	0.424E-05	11.4
90000	176.0	0.163E 00	-0.8	0.322E-05	1.7
91000	188.1	0.136E 00	-0.3	0.252E-05	-2.7
92000	198.7	0.114E 00	0.2	0.201E-05	-5.8
93000	208.4	0.974E-01	1.5	0.162E-05	-7.6

FIGURE 3

CHURCHILL, 1 FEBRUARY 1968, 1930 GMT.

ALTITUDE M MSL	TEMPERATURE DEG K	ERROR DEG K	WIND SPEED M/SEC	ERROR M/SEC	WIND DIRECTION DEGREES	ERROR DEG
34419.7	214.2	0.8	40.9	1.8	237.8	2.3
40320.9	225.9	1.1	44.1	2.7	237.5	3.3
44765.4	239.6	1.6	69.7	3.9	253.9	3.0
48470.6	260.3	2.6	140.9	6.1	273.1	2.3
52096.2	263.9	3.3	95.5	7.5	262.2	4.2
55617.9	267.6	3.8	95.3	8.7	252.1	4.9
59092.4	262.0	3.9	131.3	9.1	234.4	3.5
62479.9	267.8	4.4	91.1	9.7	230.5	5.7
66247.1	241.1	5.2	11.9	12.5	228.2	60.1
70409.1	244.4	6.5	53.3	16.3	248.7	16.9
74411.1	235.8	4.6	29.6	11.9	224.1	22.6
78283.3	205.0	2.7	88.9	8.0	114.7	5.4
82041.6	218.8	13.0	82.9	41.8	351.2	28.7
85188.9	224.3	23.4	23.5	73.8	207.8	179.0
87735.6	189.1	16.4	70.0	60.5	56.9	52.2
90209.0	177.9	12.8	59.3	52.1	93.9	52.3
92595.1	189.5	12.1	36.7	50.6	330.2	77.3
94819.7	214.1	17.3	142.4	67.3	254.2	25.0

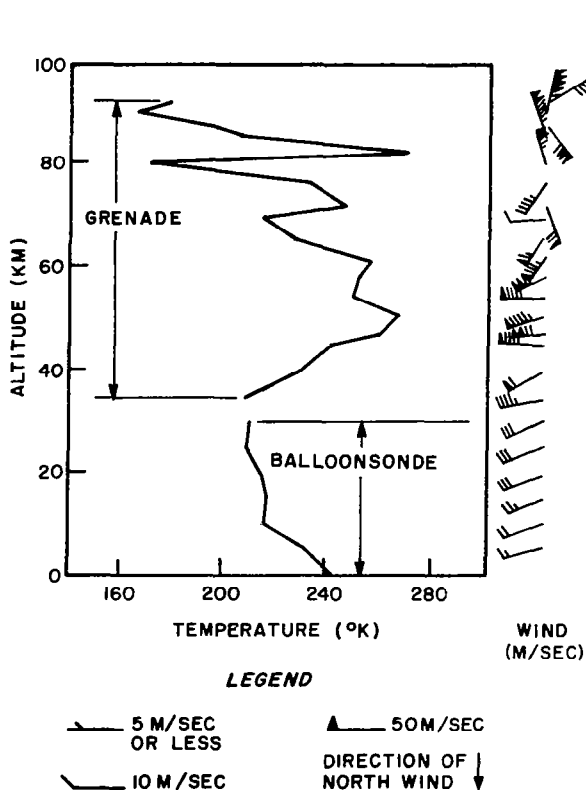


ALTITUDE M MSL	TEMPERATURE DEG K	PRESSURE NT/SQ M	DEVIATION PER CENT	DENSITY KG/CU M	DEVIATION PER CENT
35000	215.3	0.470E 03	-18.1	0.760E-02	-10.1
36000	217.3	0.401E 03	-19.4	0.643E-02	-11.3
37000	219.3	0.342E 03	-20.8	0.544E-02	-12.7
38000	221.3	0.293E 03	-22.1	0.461E-02	-13.9
39000	223.3	0.252E 03	-23.1	0.394E-02	-14.8
40000	225.3	0.217E 03	-24.2	0.336E-02	-15.8
41000	228.0	0.187E 03	-25.3	0.286E-02	-17.1
42000	231.1	0.161E 03	-26.6	0.243E-02	-18.8
43000	234.1	0.139E 03	-27.9	0.206E-02	-20.3
44000	237.2	0.120E 03	-28.7	0.177E-02	-21.4
45000	240.9	0.104E 03	-29.6	0.151E-02	-22.8
46000	246.5	0.911E 02	-30.5	0.128E-02	-24.8
47000	252.1	0.795E 02	-31.3	0.109E-02	-26.5
48000	257.7	0.698E 02	-31.6	0.944E-03	-28.2
49000	260.9	0.614E 02	-32.0	0.819E-03	-29.4
50000	261.8	0.539E 02	-32.3	0.717E-03	-30.1
51000	262.8	0.474E 02	-32.6	0.629E-03	-30.6
52000	263.8	0.417E 02	-32.8	0.551E-03	-31.1
53000	264.8	0.367E 02	-33.0	0.483E-03	-31.8
54000	265.9	0.323E 02	-33.1	0.424E-03	-32.7
55000	266.9	0.285E 02	-33.1	0.372E-03	-33.5
56000	266.9	0.251E 02	-33.0	0.328E-03	-33.9
57000	265.3	0.222E 02	-32.9	0.291E-03	-33.8
58000	263.7	0.195E 02	-32.8	0.258E-03	-33.8
59000	262.1	0.172E 02	-32.7	0.228E-03	-33.8
60000	263.5	0.151E 02	-32.5	0.200E-03	-34.5
61000	265.2	0.133E 02	-32.2	0.175E-03	-35.2
62000	267.0	0.117E 02	-31.8	0.153E-03	-35.8
63000	264.1	0.103E 02	-31.1	0.136E-03	-35.5
64000	257.0	0.916E 01	-30.3	0.124E-03	-34.1
65000	250.0	0.798E 01	-30.2	0.111E-03	-33.2
66000	242.9	0.694E 01	-30.1	0.996E-04	-32.2
67000	241.7	0.604E 01	-29.7	0.871E-04	-32.7
68000	242.5	0.526E 01	-29.3	0.755E-04	-33.7
69000	243.3	0.458E 01	-28.5	0.656E-04	-34.3
70000	244.1	0.399E 01	-27.5	0.570E-04	-34.8
71000	243.2	0.348E 01	-26.3	0.499E-04	-34.6
72000	241.0	0.304E 01	-24.8	0.439E-04	-33.9
73000	238.8	0.264E 01	-23.3	0.385E-04	-33.3
74000	236.7	0.229E 01	-21.8	0.337E-04	-32.6
75000	231.1	0.199E 01	-19.9	0.300E-04	-30.7
76000	223.2	0.173E 01	-17.7	0.270E-04	-27.6
77000	215.2	0.148E 01	-16.4	0.239E-04	-25.2
78000	207.3	0.125E 01	-15.3	0.211E-04	-23.0
79000	207.7	0.107E 01	-13.9	0.179E-04	-23.5
80000	211.3	0.909E 00	-12.3	0.149E-04	-23.0
81000	215.0	0.779E 00	-9.5	0.126E-04	-24.0
82000	218.7	0.669E 00	-6.5	0.106E-04	-22.8
83000	220.5	0.574E 00	-3.5	0.908E-05	-21.0
84000	222.2	0.494E 00	-0.3	0.774E-05	-19.0
85000	224.0	0.425E 00	3.2	0.662E-05	-16.7
86000	213.1	0.367E 00	7.1	0.600E-05	-9.2
87000	199.3	0.312E 00	9.3	0.545E-05	-0.8
88000	187.9	0.261E 00	10.2	0.485E-05	5.9
89000	183.4	0.219E 00	11.1	0.416E-05	9.4
90000	178.9	0.182E 00	10.7	0.354E-05	11.8
91000	181.8	0.151E 00	10.2	0.289E-05	11.4
92000	186.6	0.126E 00	10.2	0.235E-05	10.2
93000	194.0	0.105E 00	10.2	0.190E-05	7.7
94000	205.0	0.893E-01	10.7	0.151E-05	3.9

FIGURE 4

CHURCHILL, 1 FEBRUARY 1968, 2030 GMT.

ALTITUDE M MSL	TEMPERATURE DEG K	ERROR DEG K	WIND SPEED M/SEC	ERROR M/SEC	WIND DIRECTION DEGREES	ERROR DEG
34103.0	209.3	0.5	44.9	0.9	259.6	1.2
39929.6	230.6	1.3	58.4	2.8	239.9	2.6
44339.9	241.0	2.6	88.7	5.3	272.2	3.4
47971.1	259.6	5.5	121.2	11.5	261.3	5.1
51482.0	267.3	6.2	94.0	12.6	251.7	7.2
54873.5	249.2	5.0	90.3	11.1	267.0	6.8
58230.8	252.4	5.3	118.2	12.1	243.0	5.4
61507.4	257.4	3.8	83.3	8.5	213.2	5.3
65066.6	227.4	1.3	66.0	3.3	211.7	2.7
69002.9	215.2	4.9	10.8	13.1	265.6	70.2
72858.8	245.0	6.9	71.6	16.8	160.2	12.9
76586.2	232.8	5.9	43.5	16.1	212.8	20.5
80092.7	172.0	3.5	115.7	13.7	349.6	6.4
83035.5	270.0	15.9	325.4	45.2	180.2	6.6
85523.6	205.8	16.2	144.0	40.9	341.0	20.7
87888.6	197.2	16.5	161.7	46.8	141.3	19.9
90110.7	166.5	9.2	209.3	34.9	14.6	10.6
92189.1	178.4	7.1	78.6	30.3	59.6	23.4



WIND COMPONENTS M/SEC

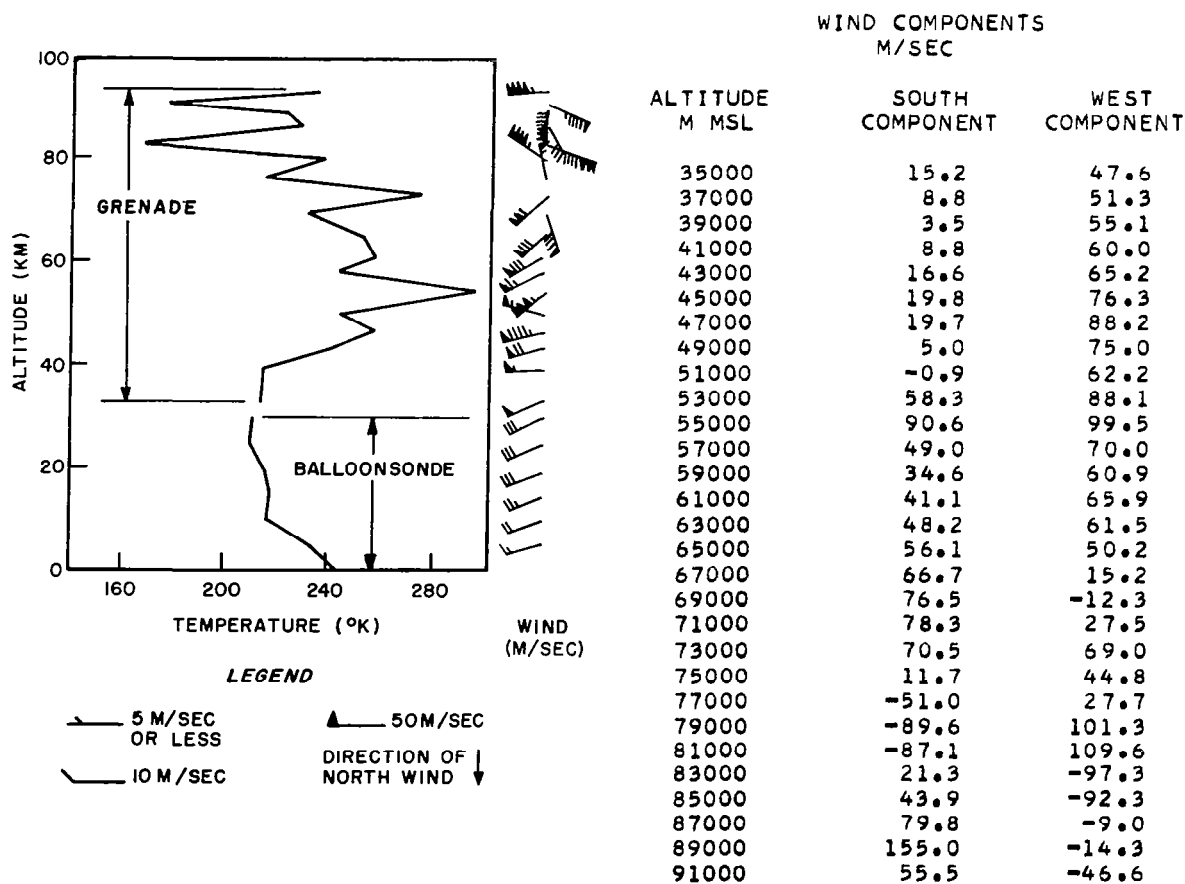
ALTITUDE M MSL	SOUTH COMPONENT	WEST COMPONENT
36000	14.9	46.2
38000	22.2	48.4
40000	26.3	52.7
42000	13.9	68.4
44000	0.5	85.6
46000	6.4	102.8
48000	17.6	115.4
50000	24.6	102.2
52000	25.0	90.0
54000	11.1	90.0
56000	21.1	95.3
58000	48.8	100.9
60000	62.2	73.1
62000	67.2	45.1
64000	60.2	37.9
66000	43.0	29.0
68000	14.9	16.9
70000	18.0	1.7
72000	52.4	-16.2
74000	57.9	-9.5
76000	39.9	15.4
78000	-24.0	22.4
80000	-70.3	19.6
82000	170.8	8.3
84000	146.4	19.0
86000	-63.0	11.4
88000	58.7	-82.0
90000	-141.3	-61.1

ALTITUDE M MSL	TEMPERATURE DEG K	PRESSURE NT/SQ M	DEVIATION PER CENT	DENSITY KG/CU M	DEVIATION PER CENT
35000	212.6	0.441E 03	-23.2	0.722E-02	-14.6
36000	216.2	0.375E 03	-24.7	0.604E-02	-16.7
37000	219.9	0.319E 03	-26.3	0.505E-02	-18.9
38000	223.6	0.274E 03	-27.2	0.427E-02	-20.3
39000	227.2	0.236E 03	-27.9	0.363E-02	-21.5
40000	230.8	0.204E 03	-28.7	0.308E-02	-22.7
41000	233.1	0.176E 03	-29.6	0.264E-02	-23.5
42000	235.5	0.152E 03	-30.6	0.225E-02	-24.6
43000	237.8	0.132E 03	-31.4	0.193E-02	-25.4
44000	240.2	0.115E 03	-32.1	0.166E-02	-26.1
45000	244.3	0.100E 03	-32.9	0.142E-02	-27.4
46000	249.5	0.869E 02	-33.7	0.121E-02	-29.1
47000	254.6	0.762E 02	-34.2	0.104E-02	-30.3
48000	259.6	0.669E 02	-34.5	0.898E-03	-31.8
49000	261.8	0.587E 02	-34.9	0.782E-03	-32.7
50000	264.1	0.517E 02	-35.1	0.681E-03	-33.5
51000	266.3	0.455E 02	-35.3	0.596E-03	-34.2
52000	264.6	0.401E 02	-35.4	0.529E-03	-33.9
53000	259.2	0.354E 02	-35.4	0.476E-03	-32.9
54000	253.9	0.310E 02	-36.0	0.425E-03	-32.5
55000	249.4	0.271E 02	-36.5	0.378E-03	-32.4
56000	250.3	0.236E 02	-37.0	0.329E-03	-33.7
57000	251.2	0.207E 02	-37.4	0.287E-03	-34.8
58000	252.2	0.181E 02	-37.7	0.250E-03	-35.8
59000	253.6	0.158E 02	-37.9	0.218E-03	-36.9
60000	255.1	0.139E 02	-38.0	0.189E-03	-37.9
61000	256.6	0.122E 02	-37.9	0.165E-03	-38.6
62000	253.2	0.107E 02	-37.8	0.147E-03	-38.3
63000	244.8	0.941E 01	-37.5	0.133E-03	-36.9
64000	236.4	0.813E 01	-38.1	0.119E-03	-36.4
65000	228.0	0.701E 01	-38.7	0.107E-03	-35.6
66000	224.5	0.605E 01	-39.0	0.939E-04	-36.1
67000	221.4	0.522E 01	-39.2	0.822E-04	-36.5
68000	218.3	0.447E 01	-39.8	0.714E-04	-37.3
69000	215.2	0.383E 01	-40.3	0.620E-04	-37.9
70000	222.9	0.327E 01	-40.6	0.512E-04	-41.5
71000	230.6	0.280E 01	-40.6	0.424E-04	-44.4
72000	238.4	0.245E 01	-39.4	0.358E-04	-46.2
73000	244.6	0.213E 01	-38.0	0.304E-04	-47.3
74000	241.3	0.186E 01	-36.4	0.269E-04	-46.2
75000	238.0	0.162E 01	-34.7	0.237E-04	-45.1
76000	234.7	0.140E 01	-33.0	0.209E-04	-44.0
77000	225.6	0.122E 01	-31.1	0.188E-04	-41.3
78000	208.3	0.105E 01	-28.7	0.177E-04	-35.5
79000	190.9	0.889E 00	-28.5	0.162E-04	-30.9
80000	173.6	0.732E 00	-29.3	0.146E-04	-26.4
81000	202.2	0.601E 00	-30.1	0.103E-04	-37.6
82000	235.5	0.505E 00	-29.5	0.746E-05	-45.9
83000	268.8	0.446E 00	-25.1	0.578E-05	-49.7
84000	245.1	0.395E 00	-20.3	0.561E-05	-41.2
85000	219.3	0.339E 00	-17.6	0.539E-05	-32.2
86000	204.1	0.288E 00	-15.7	0.493E-05	-25.4
87000	200.5	0.245E 00	-14.0	0.426E-05	-22.5
88000	195.7	0.207E 00	-12.6	0.369E-05	-19.3
89000	181.9	0.175E 00	-11.3	0.335E-05	-11.9
90000	168.0	0.143E 00	-12.6	0.297E-05	-6.1
91000	171.6	0.117E 00	-14.2	0.238E-05	-8.2
92000	177.4	0.973E-01	-14.9	0.191E-05	-10.5

FIGURE 5

CHURCHILL, 1 FEBRUARY 1968, 2115 GMT.

ALTITUDE M MSL	TEMPERATURE DEG K	ERROR DEG K	WIND SPEED M/SEC	ERROR M/SEC	WIND DIRECTION DEGREES	ERROR DEG
33317.6	213.6	0.8	49.1	1.6	245.0	1.9
39192.2	214.9	0.6	55.4	1.6	268.2	1.7
43620.7	241.9	2.1	69.4	5.5	253.9	4.4
47317.8	257.4	2.5	94.8	6.3	257.1	3.6
50906.9	244.1	2.9	56.9	8.0	283.3	8.0
54398.1	294.0	4.6	152.8	11.5	226.0	3.8
57817.9	244.0	4.8	65.1	13.5	241.7	11.5
61147.3	256.8	5.2	79.2	14.2	238.4	9.8
64889.7	253.5	7.6	78.2	21.6	225.1	15.2
69032.9	233.4	6.9	81.4	20.6	163.2	14.0
73025.3	274.3	2.6	112.2	7.3	225.5	3.5
76889.5	214.6	1.8	53.4	6.2	348.1	6.6
80590.3	237.1	19.0	206.3	66.3	304.8	16.6
83674.3	169.3	16.3	188.7	66.9	109.4	22.6
86217.1	228.8	8.3	30.0	40.6	152.8	60.2
88672.6	222.2	10.3	190.5	43.1	180.9	12.4
91043.4	178.0	23.0	95.6	119.4	114.9	73.4
93267.5	231.2	36.9	203.4	168.1	264.1	44.4

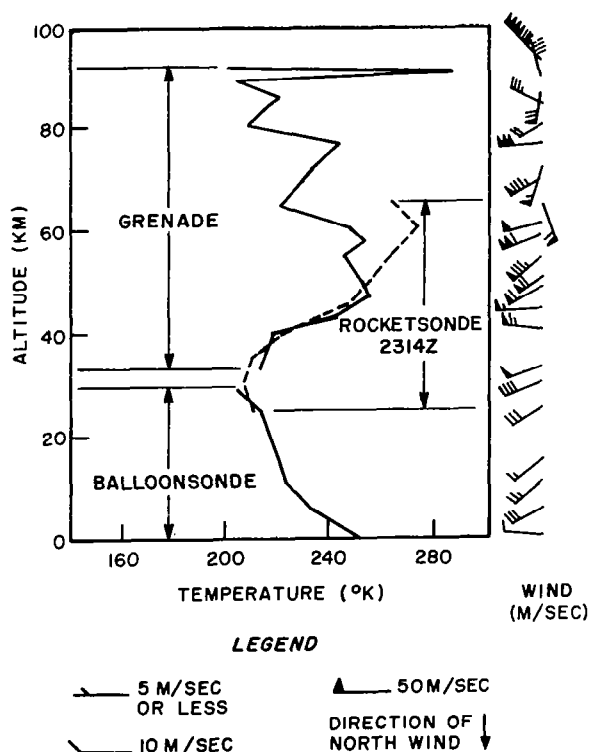


ALTITUDE M MSL	TEMPERATURE DEG K	PRESSURE NT/SQ M	DEVIATION PER CENT	DENSITY KG/CU M	DEVIATION PER CENT
34000	213.7	0.519E 03	-21.6	0.847E-02	-14.3
35000	214.0	0.443E 03	-22.7	0.722E-02	-14.6
36000	214.2	0.378E 03	-24.0	0.615E-02	-15.1
37000	214.4	0.323E 03	-25.3	0.525E-02	-15.7
38000	214.6	0.276E 03	-26.7	0.448E-02	-16.4
39000	214.9	0.236E 03	-28.1	0.382E-02	-17.2
40000	219.9	0.201E 03	-29.7	0.319E-02	-19.9
41000	225.9	0.172E 03	-31.3	0.265E-02	-23.1
42000	232.0	0.148E 03	-32.7	0.222E-02	-25.8
43000	238.2	0.128E 03	-33.2	0.188E-02	-27.5
44000	243.5	0.112E 03	-33.9	0.160E-02	-29.0
45000	247.7	0.974E 02	-34.6	0.136E-02	-30.3
46000	251.9	0.851E 02	-35.1	0.117E-02	-31.3
47000	256.0	0.746E 02	-35.5	0.101E-02	-32.1
48000	254.8	0.655E 02	-35.9	0.895E-03	-32.0
49000	251.1	0.574E 02	-36.3	0.797E-03	-31.4
50000	247.4	0.501E 02	-37.1	0.705E-03	-31.2
51000	245.4	0.436E 02	-38.0	0.619E-03	-31.6
52000	259.7	0.380E 02	-38.9	0.509E-03	-36.3
53000	274.0	0.334E 02	-39.2	0.424E-03	-40.2
54000	288.3	0.297E 02	-38.5	0.359E-03	-42.9
55000	285.2	0.265E 02	-37.8	0.324E-03	-42.1
56000	270.6	0.237E 02	-37.0	0.305E-03	-38.6
57000	256.0	0.207E 02	-37.4	0.281E-03	-36.1
58000	244.7	0.180E 02	-38.0	0.256E-03	-34.2
59000	248.6	0.157E 02	-38.5	0.220E-03	-36.2
60000	252.4	0.137E 02	-38.7	0.189E-03	-37.9
61000	256.3	0.120E 02	-38.6	0.164E-03	-39.3
62000	256.1	0.105E 02	-38.5	0.144E-03	-39.7
63000	255.2	0.929E 01	-38.3	0.126E-03	-40.3
64000	254.3	0.814E 01	-38.0	0.111E-03	-40.7
65000	253.0	0.713E 01	-37.6	0.982E-04	-41.0
66000	248.1	0.625E 01	-37.0	0.878E-04	-40.3
67000	243.2	0.547E 01	-36.3	0.784E-04	-39.4
68000	238.4	0.474E 01	-36.2	0.693E-04	-39.1
69000	233.5	0.411E 01	-35.9	0.613E-04	-38.6
70000	243.3	0.356E 01	-35.4	0.510E-04	-41.7
71000	253.5	0.308E 01	-34.8	0.423E-04	-44.5
72000	263.8	0.272E 01	-32.6	0.360E-04	-45.8
73000	274.0	0.241E 01	-30.0	0.307E-04	-46.9
74000	259.2	0.214E 01	-27.1	0.287E-04	-42.6
75000	243.8	0.189E 01	-23.9	0.270E-04	-37.6
76000	228.4	0.161E 01	-23.0	0.247E-04	-33.8
77000	215.3	0.138E 01	-21.7	0.224E-04	-30.1
78000	221.4	0.118E 01	-20.2	0.186E-04	-32.1
79000	227.4	0.101E 01	-18.0	0.156E-04	-33.5
80000	233.5	0.885E 00	-14.6	0.132E-04	-33.9
81000	228.1	0.769E 00	-10.7	0.117E-04	-29.3
82000	206.1	0.669E 00	-6.5	0.113E-04	-18.0
83000	184.1	0.560E 00	-5.9	0.106E-04	-7.7
84000	176.9	0.459E 00	-7.2	0.905E-05	-5.3
85000	200.3	0.379E 00	-8.0	0.659E-05	-17.1
86000	223.7	0.327E 00	-4.4	0.510E-05	-22.8
87000	226.7	0.283E 00	-0.6	0.435E-05	-20.8
88000	224.0	0.244E 00	2.9	0.380E-05	-16.9
89000	216.1	0.210E 00	6.7	0.339E-05	-10.7
90000	197.4	0.180E 00	9.7	0.318E-05	0.4
91000	178.8	0.149E 00	9.3	0.291E-05	12.2
92000	200.9	0.124E 00	8.3	0.215E-05	0.6
93000	224.8	0.106E 00	11.1	0.165E-05	-6.2

FIGURE 6

CHURCHILL, 5 FEBRUARY 1968, 2222 GMT.

ALTITUDE M MSL	TEMPERATURE DEG K	ERROR DEG K	WIND SPEED M/SEC	ERROR M/SEC	WIND DIRECTION DEGREES	ERROR DEG
33183.2	214.1	1.7	46.2	2.9	250.7	3.7
39067.8	218.6	1.5	65.8	2.7	276.0	2.5
43484.7	242.2	1.1	54.3	2.2	265.3	2.4
47159.5	254.5	3.0	61.0	6.2	240.9	5.5
50733.8	252.7	3.0	71.3	6.4	233.3	4.8
54231.5	247.8	2.2	86.9	5.0	228.1	3.0
57641.9	253.5	8.1	111.0	18.0	248.2	8.6
60959.5	249.3	9.0	49.7	19.4	254.3	21.9
64697.4	222.4	8.0	60.3	20.9	161.4	19.1
68815.9	231.8	11.5	82.5	29.9	244.1	19.5
72789.3	233.8	8.7	57.1	22.1	198.1	20.9
76641.6	245.5	14.3	150.7	36.5	265.9	12.6
80335.3	210.3	13.1	19.2	35.9	234.9	106.0
83420.1	217.6	13.3	36.3	37.0	297.2	57.7
85945.4	220.9	17.9	67.5	51.2	189.3	41.5
88368.1	206.3	17.8	41.6	71.6	338.4	72.5
90705.7	286.3	28.8	298.1	84.6	207.5	14.6
92910.2	202.5	0.0	237.0	0.0	319.6	0.0

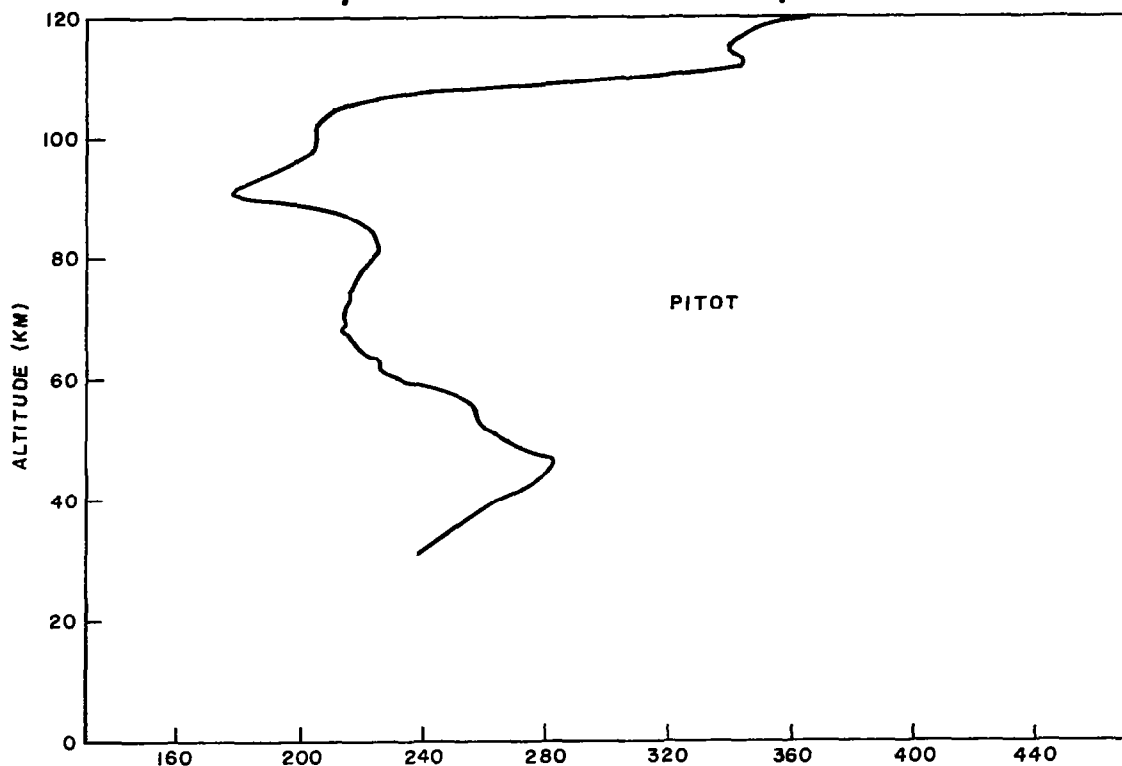


WIND COMPONENTS M/SEC

ALTITUDE M MSL	SOUTH COMPONENT	WEST COMPONENT
35000	8.3	50.3
37000	0.8	57.8
39000	-5.3	63.8
41000	-2.0	60.5
43000	3.4	55.5
45000	14.8	53.8
47000	27.9	53.5
49000	36.3	55.3
51000	43.8	57.9
53000	52.5	62.1
55000	54.0	73.5
57000	44.2	95.0
59000	29.7	80.5
61000	18.5	46.8
63000	37.3	11.2
65000	53.5	-7.3
67000	45.3	33.1
69000	38.4	65.5
71000	46.0	43.2
73000	49.4	32.6
75000	29.2	93.9
77000	11.8	130.0
79000	10.9	64.4
81000	4.8	20.5
83000	-9.3	28.8
85000	35.4	18.9
87000	20.7	12.8
89000	49.0	50.1
91000	163.6	134.4

ALTITUDE M MSL	TEMPERATURE DEG K	PRESSURE NT/SQ M	DEVIATION PER CENT	DENSITY KG/CU M	DEVIATION PER CENT
34000	214.7	0.576E 03	-13.0	0.935E-02	-5.3
35000	215.5	0.492E 03	-14.3	0.795E-02	-5.9
36000	216.2	0.420E 03	-15.6	0.677E-02	-6.7
37000	217.0	0.359E 03	-16.9	0.577E-02	-7.4
38000	217.7	0.308E 03	-18.3	0.492E-02	-8.1
39000	218.5	0.263E 03	-19.7	0.420E-02	-9.0
40000	223.6	0.226E 03	-21.2	0.352E-02	-11.8
41000	228.9	0.193E 03	-22.8	0.294E-02	-14.7
42000	234.3	0.167E 03	-24.0	0.248E-02	-17.0
43000	239.6	0.145E 03	-24.7	0.211E-02	-18.7
44000	243.9	0.126E 03	-25.4	0.180E-02	-20.1
45000	247.3	0.109E 03	-26.2	0.154E-02	-21.2
46000	250.6	0.961E 02	-26.8	0.133E-02	-22.0
47000	254.0	0.841E 02	-27.3	0.115E-02	-22.8
48000	254.1	0.737E 02	-27.9	0.101E-02	-23.2
49000	253.6	0.646E 02	-28.4	0.887E-03	-23.6
50000	253.1	0.565E 02	-29.1	0.778E-03	-24.2
51000	252.3	0.494E 02	-29.7	0.683E-03	-24.6
52000	250.9	0.433E 02	-30.3	0.601E-03	-24.9
53000	249.5	0.378E 02	-31.0	0.528E-03	-25.5
54000	248.1	0.330E 02	-31.7	0.464E-03	-26.4
55000	249.1	0.288E 02	-32.4	0.403E-03	-28.0
56000	250.8	0.252E 02	-33.0	0.350E-03	-29.6
57000	252.4	0.220E 02	-33.3	0.304E-03	-30.9
58000	253.0	0.193E 02	-33.6	0.266E-03	-31.8
59000	251.8	0.169E 02	-33.7	0.234E-03	-32.2
60000	250.5	0.148E 02	-33.9	0.206E-03	-32.6
61000	249.0	0.129E 02	-34.1	0.181E-03	-32.9
62000	241.8	0.113E 02	-34.2	0.163E-03	-31.7
63000	234.6	0.983E 01	-34.7	0.146E-03	-31.2
64000	227.4	0.846E 01	-35.6	0.129E-03	-31.2
65000	223.1	0.727E 01	-36.4	0.113E-03	-31.8
66000	225.4	0.625E 01	-37.0	0.967E-04	-34.2
67000	227.7	0.539E 01	-37.3	0.824E-04	-36.3
68000	229.9	0.466E 01	-37.3	0.706E-04	-37.9
69000	231.9	0.403E 01	-37.0	0.606E-04	-39.3
70000	232.4	0.349E 01	-36.6	0.524E-04	-40.1
71000	232.9	0.302E 01	-36.0	0.452E-04	-40.7
72000	233.4	0.262E 01	-35.1	0.391E-04	-41.1
73000	234.4	0.227E 01	-34.1	0.337E-04	-41.6
74000	237.5	0.197E 01	-32.8	0.289E-04	-42.3
75000	240.5	0.171E 01	-31.2	0.247E-04	-42.7
76000	243.6	0.149E 01	-28.9	0.213E-04	-42.7
77000	242.1	0.130E 01	-26.4	0.187E-04	-41.5
78000	232.6	0.113E 01	-23.3	0.170E-04	-37.9
79000	223.0	0.984E 00	-20.8	0.153E-04	-34.5
80000	213.5	0.839E 00	-19.0	0.136E-04	-31.4
81000	211.9	0.716E 00	-16.8	0.117E-04	-29.1
82000	214.3	0.611E 00	-14.6	0.994E-05	-28.0
83000	216.6	0.524E 00	-12.0	0.843E-05	-26.6
84000	218.4	0.450E 00	-9.2	0.717E-05	-24.9
85000	219.7	0.386E 00	-6.2	0.612E-05	-22.9
86000	220.6	0.332E 00	-3.0	0.524E-05	-20.6
87000	214.5	0.286E 00	0.2	0.464E-05	-15.6
88000	208.5	0.243E 00	2.6	0.407E-05	-11.0
89000	227.9	0.207E 00	4.8	0.316E-05	-16.8
90000	262.2	0.180E 00	9.6	0.239E-05	-24.4
91000	275.1	0.160E 00	17.3	0.203E-05	-21.6
92000	237.1	0.141E 00	23.9	0.208E-05	-2.4

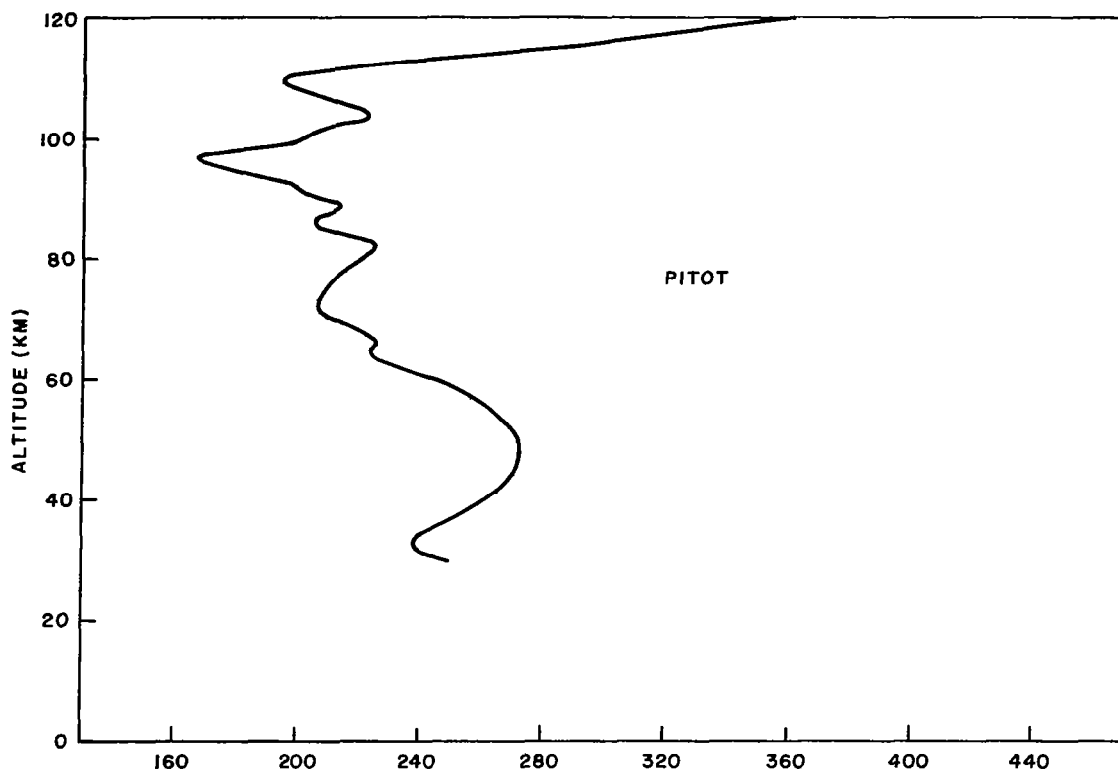
FIGURE 7
ARECIBO, 17 MARCH 1968, 0659 GMT.



ALTITUDE M MSL	TEMPERATURE DEG K	TEMPERATURE (°K) PRESSURE NT/SQ M	DEVIATION PER CENT	DENSITY KG/CU M	DEVIATION PER CENT
31000	238.7	0.917E 03	-11.0	0.134E-01	-15.1
32000	241.6	0.797E 03	-10.3	0.115E-01	-15.1
33000	245.4	0.693E 03	-9.6	0.985E-02	-14.8
34000	247.3	0.603E 03	-8.9	0.852E-02	-13.8
35000	250.6	0.527E 03	-8.1	0.734E-02	-13.2
36000	253.2	0.461E 03	-7.4	0.635E-02	-12.5
37000	256.0	0.403E 03	-6.7	0.550E-02	-11.8
38000	258.9	0.353E 03	-6.3	0.477E-02	-11.1
39000	260.6	0.310E 03	-5.5	0.416E-02	-10.0
40000	264.9	0.273E 03	-4.8	0.360E-02	-9.9
41000	268.4	0.239E 03	-4.4	0.313E-02	-9.4
42000	272.7	0.211E 03	-3.6	0.272E-02	-9.1
43000	276.9	0.187E 03	-2.5	0.237E-02	-8.8
44000	279.5	0.166E 03	-1.6	0.208E-02	-7.9
45000	281.8	0.147E 03	-0.7	0.183E-02	-6.9
46000	282.4	0.131E 03	0.0	0.162E-02	-5.4
47000	282.0	0.116E 03	0.5	0.144E-02	-3.8
48000	276.9	0.103E 03	0.8	0.130E-02	-1.2
49000	272.2	0.913E 02	1.0	0.117E-02	0.6
50000	265.0	0.805E 02	0.9	0.106E-02	3.2
51000	263.0	0.709E 02	0.6	0.940E-03	3.6
52000	260.4	0.623E 02	0.2	0.835E-03	4.2
53000	259.3	0.547E 02	-0.2	0.737E-03	3.7
54000	259.1	0.481E 02	-0.7	0.648E-03	2.6
55000	257.7	0.422E 02	-1.1	0.572E-03	1.9
56000	255.1	0.370E 02	-1.5	0.507E-03	1.8
57000	251.1	0.323E 02	-2.2	0.451E-03	2.2
58000	246.1	0.283E 02	-2.5	0.402E-03	2.8
59000	239.4	0.246E 02	-3.6	0.360E-03	4.0

ALTITUDE M MSL	TEMPERATURE DEG K	PRESSURE NT/SQ M	DEVIATION PER CENT	DENSITY KG/CU M	DEVIATION PER CENT
60000	231.4	0.213E 02	-5.0	0.323E-03	5.5
61000	226.5	0.185E 02	-5.8	0.285E-03	5.4
62000	225.3	0.158E 02	-8.0	0.247E-03	3.2
63000	226.4	0.137E 02	-8.9	0.212E-03	-0.2
64000	222.3	0.118E 02	-9.7	0.186E-03	-1.2
65000	218.0	0.101E 02	-10.9	0.163E-03	-2.2
66000	215.9	0.873E 01	-12.1	0.141E-03	-4.1
67000	213.4	0.746E 01	-13.3	0.122E-03	-5.8
68000	216.3	0.638E 01	-14.2	0.103E-03	-9.6
69000	214.3	0.546E 01	-14.8	0.890E-04	-10.9
70000	214.1	0.467E 01	-15.2	0.762E-04	-12.9
71000	215.6	0.399E 01	-15.5	0.648E-04	-15.2
72000	216.4	0.342E 01	-15.3	0.553E-04	-16.9
73000	216.4	0.293E 01	-15.0	0.474E-04	-18.0
74000	216.5	0.251E 01	-14.2	0.406E-04	-19.0
75000	217.8	0.215E 01	-13.2	0.346E-04	-20.1
76000	219.2	0.185E 01	-11.9	0.295E-04	-21.0
77000	220.5	0.158E 01	-10.5	0.252E-04	-21.4
78000	221.2	0.135E 01	-8.6	0.216E-04	-21.4
79000	223.4	0.117E 01	-5.1	0.184E-04	-21.6
80000	222.8	0.101E 01	-2.0	0.159E-04	-20.4
81000	226.3	0.875E 00	1.6	0.135E-04	-18.7
82000	225.1	0.755E 00	5.4	0.117E-04	-15.3
83000	224.8	0.650E 00	9.1	0.101E-04	-12.1
84000	224.3	0.561E 00	13.1	0.873E-05	-8.7
85000	222.9	0.483E 00	17.3	0.757E-05	-4.8
86000	220.0	0.415E 00	21.2	0.660E-05	-0.2
87000	214.5	0.357E 00	25.1	0.581E-05	5.5
88000	207.5	0.305E 00	28.5	0.513E-05	12.0
89000	197.2	0.258E 00	30.8	0.458E-05	20.2
90000	184.0	0.217E 00	32.1	0.412E-05	29.9
91000	178.7	0.179E 00	31.3	0.353E-05	35.8
92000	179.3	0.149E 00	30.4	0.292E-05	36.6
93000	183.1	0.125E 00	30.2	0.238E-05	34.9
94000	188.8	0.104E 00	29.5	0.193E-05	32.2
95000	193.9	0.878E-01	29.1	0.158E-05	30.4
96000	197.4	0.741E-01	28.9	0.131E-05	29.9
97000	200.7	0.627E-01	28.9	0.109E-05	29.5
98000	203.2	0.531E-01	28.5	0.913E-06	29.6
99000	205.7	0.451E-01	28.2	0.767E-06	29.7
100000	205.4	0.385E-01	28.0	0.654E-06	31.4
101000	205.2	0.327E-01	27.3	0.557E-06	33.9
102000	204.3	0.278E-01	25.9	0.476E-06	36.2
103000	207.0	0.237E-01	24.4	0.400E-06	35.8
104000	209.0	0.202E-01	22.8	0.338E-06	35.6
105000	211.7	0.171E-01	20.1	0.285E-06	34.6
106000	217.3	0.147E-01	18.7	0.238E-06	31.9
107000	224.8	0.127E-01	17.3	0.198E-06	28.3
108000	242.8	0.110E-01	16.3	0.159E-06	20.1
109000	276.2	0.974E-02	16.6	0.123E-06	7.9
110000	306.0	0.870E-02	18.3	0.991E-07	0.8
111000	330.7	0.783E-02	20.6	0.827E-07	-1.0
112000	345.0	0.711E-02	23.5	0.719E-07	0.5
113000	345.8	0.646E-02	25.9	0.652E-07	5.9
114000	341.4	0.587E-02	28.0	0.600E-07	12.7
115000	339.3	0.533E-02	29.3	0.548E-07	18.5
116000	340.9	0.483E-02	30.3	0.495E-07	22.6
117000	342.8	0.439E-02	31.0	0.447E-07	26.4
118000	348.3	0.398E-02	31.0	0.400E-07	28.5
119000	355.3	0.363E-02	31.5	0.357E-07	29.9
120000	364.0	0.331E-02	31.6	0.318E-07	30.5

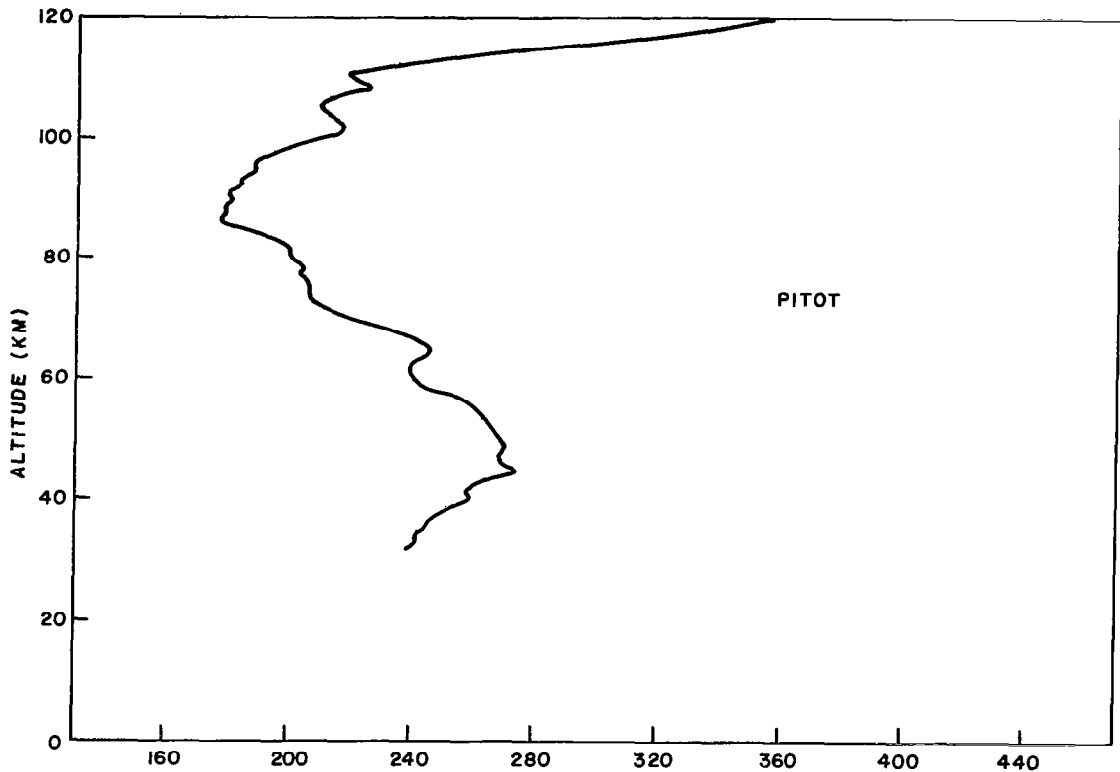
FIGURE 8
ARECIBO, 17 MARCH 1968, 1845 GMT.



ALTITUDE	TEMPERATURE	PRESSURE	DEVIATION	DENSITY	DEVIATION
M. MSL	DEG K	NT/SQ M	PER CENT	KG/CU M	PER CENT
30000	249.4	0.113E 04	-5.5	0.158E-01	-14.1
31000	241.8	0.985E 03	-4.4	0.142E-01	-10.0
32000	238.5	0.854E 03	-3.8	0.125E-01	-7.8
33000	237.2	0.741E 03	-3.3	0.109E-01	-5.7
34000	239.7	0.643E 03	-2.9	0.936E-02	-5.3
35000	243.8	0.559E 03	-2.5	0.300E-02	-5.4
36000	247.1	0.487E 03	-2.1	0.688E-02	-5.2
37000	249.8	0.425E 03	-1.8	0.594E-02	-4.7
38000	253.4	0.371E 03	-1.3	0.512E-02	-4.6
39000	257.8	0.325E 03	-1.0	0.441E-02	-4.6
40000	260.6	0.285E 03	-0.6	0.383E-02	-4.1
41000	264.3	0.250E 03	-0.1	0.332E-02	-3.9
42000	266.4	0.221E 03	0.5	0.290E-02	-3.1
43000	269.3	0.194E 03	0.8	0.253E-02	-2.6
44000	270.9	0.171E 03	1.4	0.222E-02	-1.7
45000	270.9	0.151E 03	1.9	0.196E-02	-0.3
46000	271.0	0.134E 03	2.5	0.173E-02	0.9
47000	272.6	0.118E 03	2.6	0.152E-02	1.5
48000	271.2	0.105E 03	2.6	0.135E-02	2.5
49000	271.7	0.927E 02	2.7	0.119E-02	2.3
50000	272.1	0.819E 02	2.7	0.105E-02	2.2
51000	270.8	0.723E 02	2.7	0.932E-03	2.7
52000	268.5	0.638E 02	2.6	0.830E-03	3.6
53000	266.3	0.563E 02	2.6	0.738E-03	3.8
54000	265.7	0.497E 02	2.5	0.652E-03	3.2
55000	263.0	0.437E 02	2.2	0.580E-03	3.4
56000	260.0	0.383E 02	1.9	0.516E-03	3.6
57000	256.7	0.337E 02	1.7	0.459E-03	4.0
58000	253.1	0.295E 02	1.5	0.408E-03	4.3
59000	248.9	0.258E 02	1.0	0.363E-03	4.9

ALTITUDE M MSL	TEMPERATURE DEG K	PRESSURE NT/SQ M	DEVIATION PER CENT	DENSITY KG/CU M	DEVIATION PER CENT
60000	244.9	0.225E 02	0.3	0.322E-03	5.2
61000	239.3	0.195E 02	-0.4	0.287E-03	6.1
62000	232.8	0.170E 02	-1.0	0.256E-03	6.9
63000	226.9	0.146E 02	-2.7	0.227E-03	6.8
64000	223.1	0.127E 02	-3.1	0.199E-03	5.6
65000	223.4	0.109E 02	-4.2	0.171E-03	2.5
66000	225.4	0.943E 01	-5.0	0.146E-03	-0.7
67000	223.2	0.813E 01	-5.5	0.127E-03	-2.0
68000	217.5	0.698E 01	-6.1	0.112E-03	-1.7
69000	213.0	0.598E 01	-6.7	0.979E-04	-2.1
70000	209.4	0.510E 01	-7.4	0.850E-04	-2.9
71000	207.1	0.434E 01	-8.2	0.732E-04	-4.2
72000	207.0	0.369E 01	-8.8	0.623E-04	-6.4
73000	207.5	0.314E 01	-8.9	0.529E-04	-8.5
74000	208.7	0.267E 01	-8.7	0.448E-04	-10.6
75000	208.6	0.227E 01	-8.4	0.382E-04	-11.8
76000	210.4	0.194E 01	-7.5	0.323E-04	-13.5
77000	212.5	0.165E 01	-6.7	0.273E-04	-14.9
78000	215.8	0.141E 01	-5.0	0.230E-04	-16.3
79000	218.2	0.122E 01	-1.8	0.195E-04	-16.9
80000	220.2	0.104E 01	1.1	0.166E-04	-16.9
81000	223.0	0.902E 00	4.7	0.141E-04	-15.1
82000	224.0	0.777E 00	8.4	0.121E-04	-12.4
83000	222.3	0.669E 00	12.2	0.105E-04	-8.6
84000	214.5	0.574E 00	15.8	0.934E-05	-2.3
85000	207.2	0.490E 00	18.9	0.826E-05	3.8
86000	205.3	0.417E 00	21.6	0.709E-05	7.1
87000	209.8	0.355E 00	24.7	0.591E-05	7.3
88000	211.8	0.303E 00	27.9	0.500E-05	9.1
89000	212.1	0.259E 00	31.5	0.427E-05	12.0
90000	207.2	0.221E 00	34.6	0.373E-05	17.6
91000	201.4	0.187E 00	37.2	0.326E-05	25.4
92000	198.6	0.158E 00	38.5	0.280E-05	31.0
93000	191.5	0.134E 00	40.2	0.245E-05	38.9
94000	182.8	0.112E 00	39.8	0.215E-05	47.3
95000	175.6	0.937E-01	37.8	0.186E-05	53.5
96000	169.5	0.773E-01	34.5	0.159E-05	57.7
97000	167.6	0.634E-01	30.2	0.132E-05	56.8
98000	178.8	0.522E-01	26.2	0.102E-05	44.8
99000	198.1	0.438E-01	24.4	0.773E-06	30.7
100000	203.0	0.371E-01	23.6	0.640E-06	28.6
101000	206.5	0.315E-01	22.7	0.535E-06	28.6
102000	213.9	0.270E-01	22.3	0.441E-06	26.2
103000	222.7	0.231E-01	21.6	0.364E-06	23.5
104000	223.3	0.199E-01	21.2	0.313E-06	25.6
105000	219.9	0.171E-01	20.1	0.274E-06	29.4
106000	212.7	0.147E-01	18.7	0.243E-06	34.7
107000	205.3	0.126E-01	16.4	0.215E-06	39.3
108000	199.4	0.107E-01	12.9	0.188E-06	42.1
109000	194.4	0.909E-02	8.7	0.163E-06	43.1
110000	195.0	0.766E-02	4.2	0.137E-06	39.3
111000	207.9	0.649E-02	-0.0	0.109E-06	30.3
112000	226.0	0.558E-02	-3.0	0.861E-07	20.3
113000	245.5	0.485E-02	-5.4	0.689E-07	11.9
114000	264.9	0.426E-02	-7.0	0.561E-07	5.4
115000	286.0	0.377E-02	-8.4	0.461E-07	-0.2
116000	305.5	0.337E-02	-9.1	0.386E-07	-4.3
117000	321.7	0.303E-02	-9.4	0.330E-07	-6.6
118000	337.0	0.274E-02	-9.7	0.285E-07	-8.4
119000	348.9	0.249E-02	-9.8	0.250E-07	-9.0
120000	361.2	0.227E-02	-9.6	0.220E-07	-9.6

FIGURE 9
ARECIBO, 18 MARCH 1968, 0700 GMT.



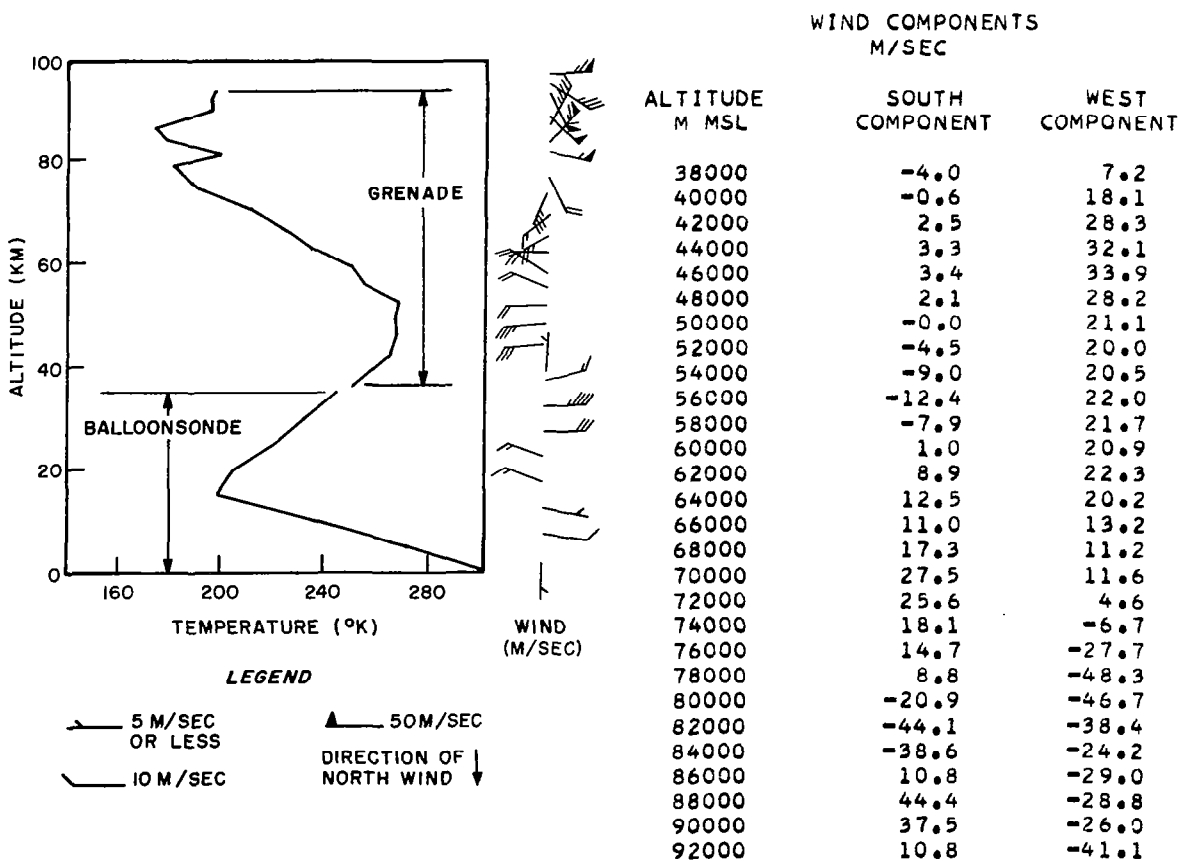
ALTITUDE M MSL	TEMPERATURE DEG K	TEMPERATURE (°K) PRESSURE NT/SQ M	DEVIATION PER CENT	DENSITY KG/CU M	DEVIATION PER CENT
32000	239.4	0.913E 03	2.7	0.133E-01	-1.9
33000	242.7	0.793E 03	3.3	0.114E-01	-1.4
34000	242.5	0.690E 03	4.1	0.992E-02	0.3
35000	244.3	0.599E 03	4.4	0.857E-02	1.2
36000	245.8	0.522E 03	4.8	0.742E-02	2.2
37000	249.0	0.455E 03	5.2	0.639E-02	2.4
38000	252.3	0.398E 03	5.7	0.551E-02	2.6
39000	257.5	0.349E 03	6.2	0.473E-02	2.2
40000	258.2	0.306E 03	6.8	0.414E-02	3.6
41000	257.7	0.269E 03	7.2	0.364E-02	5.3
42000	258.0	0.235E 03	7.2	0.319E-02	6.5
43000	265.0	0.206E 03	7.0	0.273E-02	5.0
44000	272.8	0.182E 03	7.7	0.234E-02	3.5
45000	274.0	0.161E 03	8.1	0.206E-02	4.7
46000	272.8	0.142E 03	8.6	0.183E-02	6.7
47000	268.9	0.126E 03	9.1	0.164E-02	9.5
48000	268.2	0.111E 03	9.0	0.145E-02	10.0
49000	270.2	0.983E 02	8.9	0.127E-02	9.2
50000	268.1	0.869E 02	8.9	0.113E-02	10.0
51000	267.5	0.766E 02	8.7	0.999E-03	10.1
52000	266.5	0.675E 02	8.6	0.884E-03	10.3
53000	264.6	0.594E 02	8.2	0.784E-03	10.3
54000	263.6	0.523E 02	8.0	0.693E-03	9.7
55000	261.8	0.461E 02	7.9	0.614E-03	9.4
56000	258.3	0.405E 02	7.6	0.547E-03	9.9
57000	254.0	0.354E 02	7.0	0.488E-03	10.6
58000	247.5	0.310E 02	6.6	0.438E-03	12.0
59000	243.7	0.270E 02	5.7	0.388E-03	12.1

ALTITUDE	TEMPERATURE	PRESSURE	DEVIATION	DENSITY	DEVIATION
M MSL	DEG K	NT/SQ M	PER CENT	KG/CU M	PER CENT
60000	240.7	0.235E 02	5.0	0.342E-03	11.8
61000	239.4	0.205E 02	4.2	0.299E-03	10.6
62000	239.4	0.178E 02	3.5	0.260E-03	8.6
63000	240.5	0.154E 02	2.5	0.225E-03	5.8
64000	244.3	0.134E 02	2.3	0.193E-03	2.4
65000	246.3	0.117E 02	3.0	0.167E-03	0.1
66000	245.9	0.103E 02	3.6	0.146E-03	-0.7
67000	242.8	0.898E 01	4.3	0.129E-03	-0.4
68000	236.0	0.782E 01	5.1	0.116E-03	1.7
69000	229.0	0.675E 01	5.3	0.103E-03	3.0
70000	223.0	0.582E 01	5.5	0.912E-04	4.1
71000	217.0	0.501E 01	5.8	0.805E-04	5.3
72000	211.8	0.429E 01	5.9	0.706E-04	6.0
73000	208.8	0.365E 01	5.7	0.611E-04	5.5
74000	206.0	0.310E 01	5.7	0.527E-04	5.0
75000	206.6	0.263E 01	6.0	0.447E-04	3.1
76000	206.1	0.225E 01	7.0	0.381E-04	1.9
77000	205.5	0.190E 01	7.5	0.325E-04	1.2
78000	203.4	0.162E 01	9.3	0.279E-04	1.4
79000	204.2	0.137E 01	10.3	0.236E-04	0.4
80000	201.4	0.117E 01	13.1	0.203E-04	1.5
81000	200.3	0.994E 00	15.3	0.173E-04	4.0
82000	199.5	0.841E 00	17.3	0.147E-04	6.3
83000	195.0	0.710E 00	19.1	0.127E-04	10.4
84000	191.2	0.597E 00	20.4	0.109E-04	13.9
85000	184.5	0.501E 00	21.5	0.947E-05	19.0
86000	179.9	0.417E 00	21.6	0.809E-05	22.2
87000	177.9	0.346E 00	21.4	0.679E-05	23.3
88000	178.1	0.286E 00	20.6	0.563E-05	22.9
89000	178.8	0.238E 00	20.7	0.465E-05	22.0
90000	181.4	0.198E 00	20.8	0.382E-05	20.5
91000	180.2	0.165E 00	20.6	0.320E-05	23.1
92000	182.5	0.137E 00	19.9	0.263E-05	23.0
93000	183.8	0.114E 00	19.7	0.218E-05	23.6
94000	185.9	0.959E-01	18.9	0.180E-05	23.3
95000	188.0	0.803E-01	18.2	0.149E-05	23.0
96000	187.9	0.673E-01	17.1	0.125E-05	24.0
97000	189.4	0.565E-01	16.0	0.104E-05	23.5
98000	194.5	0.474E-01	14.6	0.852E-06	20.9
99000	201.3	0.401E-01	13.8	0.696E-06	17.7
100000	208.1	0.341E-01	13.4	0.573E-06	15.1
101000	214.2	0.291E-01	13.3	0.476E-06	14.4
102000	217.6	0.250E-01	13.3	0.402E-06	15.0
103000	215.1	0.214E-01	12.5	0.349E-06	18.5
104000	212.3	0.183E-01	11.5	0.303E-06	21.5
105000	210.8	0.157E-01	9.8	0.261E-06	23.2
106000	209.9	0.134E-01	8.0	0.224E-06	24.1
107000	212.6	0.115E-01	5.9	0.189E-06	22.4
108000	218.2	0.989E-02	3.8	0.158E-06	19.4
109000	226.7	0.851E-02	1.9	0.131E-06	15.0
110000	222.9	0.734E-02	-0.1	0.115E-06	17.0
111000	218.5	0.633E-02	-2.4	0.101E-06	20.8
112000	224.4	0.545E-02	-5.3	0.847E-07	18.4
113000	235.1	0.471E-02	-8.0	0.700E-07	13.7
114000	255.8	0.411E-02	-10.2	0.562E-07	5.6
115000	277.4	0.363E-02	-11.7	0.458E-07	-0.9
116000	297.3	0.323E-02	-12.7	0.381E-07	-5.5
117000	317.9	0.291E-02	-12.9	0.320E-07	-9.5
118000	333.1	0.263E-02	-13.2	0.276E-07	-11.3
119000	346.4	0.238E-02	-13.7	0.241E-07	-12.2
120000	355.2	0.217E-02	-13.8	0.214E-07	-12.1

FIGURE 10

NATAL, 24 MARCH 1968, 1804 GMT.

ALTITUDE M MSL	TEMPERATURE DEG K	ERROR DEG K	WIND SPEED M/SEC	ERROR M/SEC	WIND DIRECTION DEGREES	ERROR DEG
36570.0	251.6	0.4	6.5	2.3	4.2	27.9
42193.4	266.4	0.6	30.2	3.4	264.0	5.2
46410.0	268.7	0.6	35.0	3.5	264.1	4.5
49919.1	268.2	0.9	20.2	4.8	268.5	10.4
53350.7	269.7	1.3	21.4	6.9	291.5	13.4
56694.4	257.2	2.1	26.5	10.7	301.5	17.5
59936.3	251.1	3.3	20.5	16.4	267.5	35.6
63107.4	236.2	4.4	26.9	19.9	240.2	42.7
66674.2	224.5	3.4	14.9	14.9	226.4	66.9
70601.9	212.5	2.5	33.4	10.3	201.2	24.0
74377.9	191.7	2.2	18.3	11.8	153.6	38.2
78011.4	182.4	2.4	53.5	16.1	103.7	12.9
81501.1	198.9	2.4	63.0	12.1	42.6	13.6
84410.0	179.4	2.1	45.1	11.4	26.1	19.5
86786.2	174.5	3.0	49.7	20.8	137.3	21.1
89082.2	197.1	4.3	57.0	24.4	154.5	25.8
91297.8	197.6	6.1	33.5	40.9	122.5	54.2
93367.4	197.6	6.1	65.3	40.0	86.9	28.2

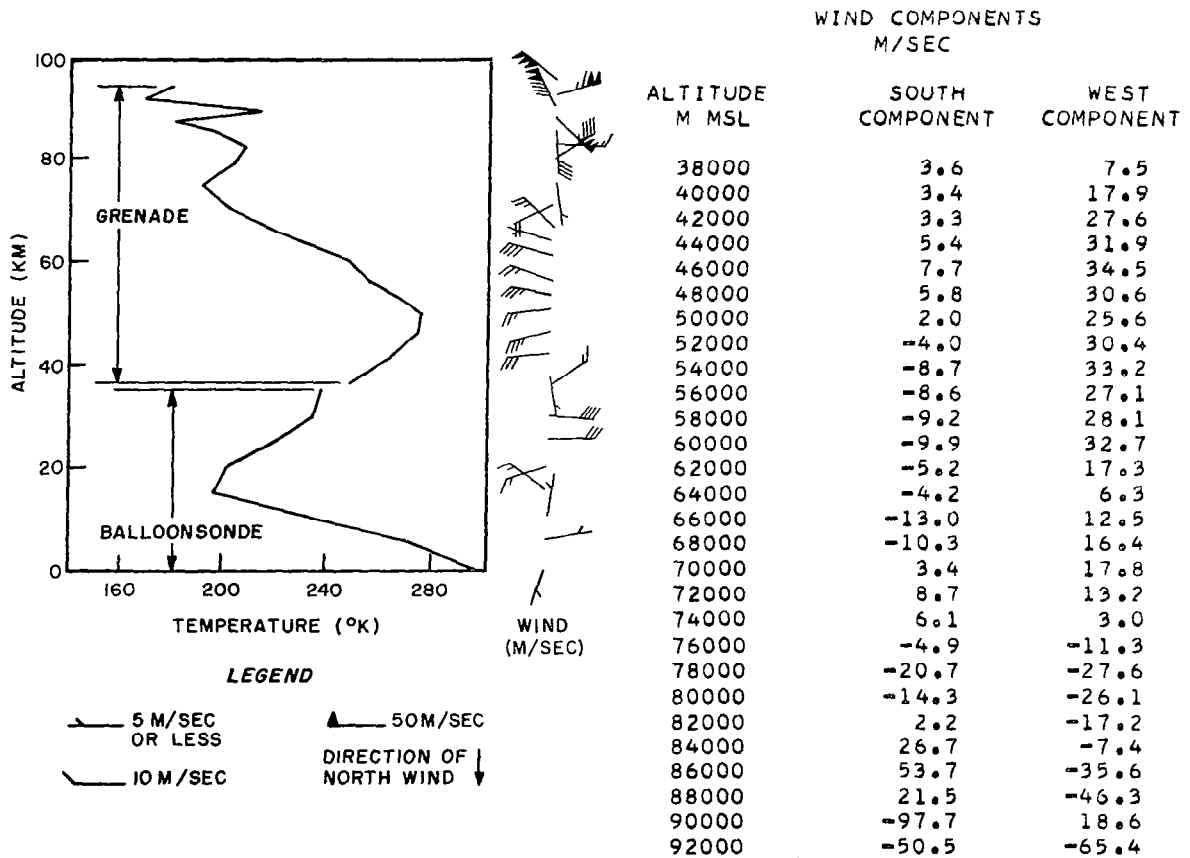


ALTITUDE M MSL	TEMPERATURE DEG K	PRESSURE NT/SQ M	DEVIATION PER CENT	DENSITY KG/CU M	DEVIATION PER CENT
37000	252.8	0.460E 03	6.2	0.634E-02	1.7
38000	255.4	0.402E 03	6.7	0.549E-02	2.3
39000	258.0	0.352E 03	7.0	0.475E-02	2.7
40000	260.6	0.308E 03	7.5	0.412E-02	3.2
41000	263.3	0.272E 03	8.3	0.359E-02	4.1
42000	265.9	0.239E 03	9.0	0.314E-02	4.8
43000	266.8	0.211E 03	9.5	0.275E-02	6.1
44000	267.4	0.186E 03	9.9	0.242E-02	7.4
45000	267.9	0.164E 03	10.2	0.213E-02	8.6
46000	268.5	0.145E 03	10.4	0.188E-02	9.7
47000	268.6	0.127E 03	10.4	0.165E-02	10.8
48000	268.5	0.112E 03	10.4	0.146E-02	11.2
49000	268.3	0.996E 02	10.3	0.129E-02	11.2
50000	268.2	0.879E 02	10.2	0.114E-02	11.2
51000	268.7	0.776E 02	10.1	0.100E-02	10.9
52000	269.1	0.685E 02	10.1	0.886E-03	10.7
53000	269.6	0.605E 02	10.1	0.781E-03	10.0
54000	267.3	0.534E 02	10.2	0.696E-03	10.3
55000	263.6	0.472E 02	10.4	0.624E-03	11.2
56000	259.8	0.414E 02	10.0	0.555E-03	11.7
57000	256.6	0.364E 02	9.8	0.494E-03	11.9
58000	254.8	0.319E 02	9.7	0.437E-03	11.8
59000	252.9	0.280E 02	9.4	0.385E-03	11.5
60000	250.8	0.245E 02	9.1	0.340E-03	11.2
61000	246.1	0.214E 02	9.0	0.303E-03	12.3
62000	241.4	0.187E 02	8.4	0.269E-03	12.8
63000	236.7	0.162E 02	7.7	0.239E-03	12.4
64000	233.3	0.141E 02	7.3	0.210E-03	11.8
65000	230.0	0.122E 02	6.7	0.185E-03	10.9
66000	226.7	0.105E 02	5.9	0.161E-03	9.9
67000	223.5	0.907E 01	5.3	0.141E-03	9.1
68000	220.5	0.782E 01	5.1	0.123E-03	8.4
69000	217.4	0.672E 01	4.7	0.107E-03	7.7
70000	214.3	0.575E 01	4.1	0.934E-04	6.7
71000	210.3	0.491E 01	3.8	0.814E-04	6.5
72000	204.8	0.420E 01	3.8	0.715E-04	7.4
73000	199.3	0.356E 01	3.2	0.623E-04	7.6
74000	193.8	0.299E 01	1.9	0.538E-04	7.4
75000	190.1	0.251E 01	1.1	0.461E-04	6.4
76000	187.5	0.211E 01	0.6	0.393E-04	5.3
77000	185.0	0.176E 01	-0.2	0.332E-04	3.7
78000	182.5	0.147E 01	-0.9	0.281E-04	2.3
79000	187.1	0.122E 01	-1.3	0.228E-04	-2.7
80000	191.8	0.102E 01	-0.9	0.186E-04	-6.7
81000	196.6	0.869E 00	0.8	0.154E-04	-7.3
82000	195.6	0.735E 00	2.6	0.130E-04	-5.2
83000	188.8	0.622E 00	4.4	0.114E-04	-0.0
84000	182.1	0.519E 00	4.7	0.993E-05	3.8
85000	178.1	0.431E 00	4.6	0.844E-05	6.1
86000	176.1	0.358E 00	4.3	0.708E-05	7.0
87000	176.6	0.295E 00	3.6	0.583E-05	6.0
88000	186.4	0.245E 00	3.2	0.458E-05	0.0
89000	196.3	0.207E 00	4.8	0.367E-05	-3.4
90000	197.3	0.175E 00	6.5	0.309E-05	-2.4
91000	197.6	0.148E 00	8.1	0.261E-05	0.5
92000	197.6	0.125E 00	9.4	0.220E-05	3.3
93000	197.6	0.106E 00	10.4	0.186E-05	5.9

FIGURE II

NATAL, 25 MARCH 1968, 0600 GMT.

ALTITUDE M MSL	TEMPERATURE DEG K	ERROR DEG K	WIND SPEED M/SEC	ERROR M/SEC	WIND DIRECTION DEGREES	ERROR DEG
36508.2	249.1	0.4	3.8	2.2	178.2	43.0
42205.2	265.2	0.5	29.4	3.2	263.9	4.9
46479.1	274.8	1.1	36.6	5.8	256.4	7.6
50034.6	275.3	2.0	24.1	9.8	264.5	18.5
53505.6	268.2	3.0	36.4	15.3	284.2	17.3
56880.8	256.1	3.4	25.6	17.1	289.3	27.8
60163.1	248.6	3.5	37.2	17.5	286.5	19.4
63367.2	233.8	4.6	3.9	23.5	287.8	250.2
66976.8	219.6	3.2	23.4	16.3	317.8	34.4
70954.6	203.1	2.4	21.0	12.0	241.7	32.4
74789.3	192.4	2.0	5.3	9.6	169.7	123.6
78486.7	203.0	1.8	41.7	8.6	51.6	13.3
82029.6	209.2	3.9	17.3	21.6	93.9	54.1
85002.6	197.3	5.2	39.8	23.5	176.4	43.4
87442.5	182.3	2.8	111.7	17.5	131.4	7.7
89789.7	213.3	6.2	137.4	30.9	336.7	13.0
92047.4	170.0	5.6	113.7	35.7	73.5	16.6
94164.7	180.7	4.5	149.7	31.5	310.7	9.3

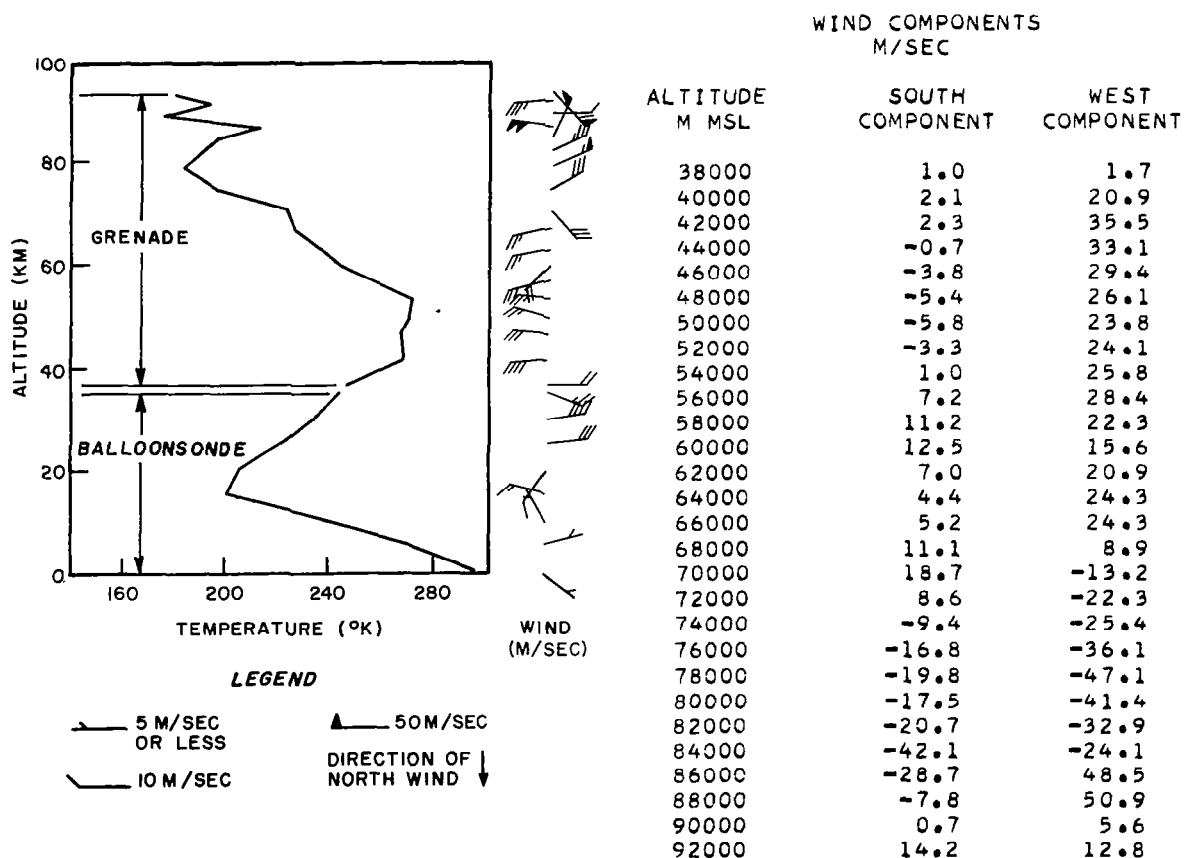


ALTITUDE M MSL	TEMPERATURE DEG K	PRESSURE NT/SQ M	DEVIATION PER CENT	DENSITY KG/CU M	DEVIATION PER CENT
37000	250.5	0.446E 03	2.9	0.620E-02	-0.5
38000	253.3	0.389E 03	3.3	0.535E-02	-0.1
39000	256.1	0.340E 03	3.4	0.462E-02	0.0
40000	259.0	0.298E 03	3.8	0.400E-02	0.3
41000	261.8	0.262E 03	4.5	0.349E-02	1.0
42000	264.6	0.231E 03	5.1	0.304E-02	1.6
43000	267.0	0.203E 03	5.5	0.265E-02	2.2
44000	269.2	0.179E 03	5.8	0.232E-02	2.7
45000	271.5	0.158E 03	6.2	0.203E-02	3.3
46000	273.8	0.140E 03	6.7	0.178E-02	4.0
47000	274.9	0.124E 03	7.0	0.157E-02	4.9
48000	275.0	0.109E 03	7.3	0.139E-02	5.5
49000	275.1	0.971E 02	7.5	0.123E-02	5.7
50000	275.3	0.860E 02	7.8	0.108E-02	5.9
51000	273.3	0.761E 02	8.1	0.970E-03	7.0
52000	271.2	0.673E 02	8.2	0.865E-03	8.0
53000	269.2	0.594E 02	8.2	0.769E-03	8.3
54000	266.4	0.524E 02	8.2	0.686E-03	8.6
55000	262.8	0.463E 02	8.3	0.614E-03	9.5
56000	259.2	0.407E 02	8.0	0.546E-03	9.9
57000	255.8	0.357E 02	7.7	0.486E-03	10.2
58000	253.5	0.313E 02	7.5	0.430E-03	10.1
59000	251.2	0.274E 02	7.2	0.380E-03	10.0
60000	249.0	0.240E 02	6.8	0.335E-03	9.7
61000	244.7	0.209E 02	6.5	0.298E-03	10.5
62000	240.1	0.183E 02	6.1	0.265E-03	10.9
63000	235.5	0.158E 02	5.2	0.234E-03	10.4
64000	231.3	0.137E 02	4.6	0.207E-03	10.0
65000	227.3	0.119E 02	4.1	0.182E-03	9.5
66000	223.4	0.102E 02	3.0	0.159E-03	8.5
67000	219.5	0.879E 01	2.1	0.139E-03	7.7
68000	215.3	0.756E 01	1.5	0.122E-03	7.2
69000	211.2	0.649E 01	1.1	0.107E-03	7.1
70000	207.0	0.551E 01	-0.1	0.927E-04	5.9
71000	202.9	0.467E 01	-1.2	0.802E-04	5.0
72000	200.1	0.397E 01	-1.9	0.691E-04	3.7
73000	197.4	0.336E 01	-2.5	0.594E-04	2.6
74000	194.6	0.283E 01	-3.6	0.506E-04	1.0
75000	193.0	0.238E 01	-4.3	0.429E-04	-0.8
76000	195.8	0.200E 01	-4.8	0.356E-04	-4.6
77000	198.7	0.169E 01	-4.6	0.296E-04	-7.6
78000	201.6	0.143E 01	-3.5	0.248E-04	-9.8
79000	203.9	0.121E 01	-2.0	0.208E-04	-11.3
80000	205.6	0.103E 01	-0.2	0.175E-04	-12.3
81000	207.4	0.881E 00	2.2	0.148E-04	-10.9
82000	209.1	0.752E 00	4.9	0.125E-04	-9.3
83000	205.3	0.642E 00	7.7	0.108E-04	-5.2
84000	201.3	0.546E 00	10.2	0.945E-05	-1.1
85000	197.4	0.461E 00	11.9	0.815E-05	2.4
86000	191.2	0.390E 00	13.8	0.711E-05	7.5
87000	185.0	0.326E 00	14.4	0.615E-05	11.7
88000	189.6	0.272E 00	14.6	0.499E-05	9.1
89000	202.8	0.229E 00	16.0	0.393E-05	3.3
90000	209.2	0.196E 00	19.6	0.327E-05	3.2
91000	190.0	0.167E 00	22.4	0.307E-05	18.3
92000	170.9	0.138E 00	20.6	0.281E-05	31.7
93000	174.8	0.113E 00	18.3	0.226E-05	28.4
94000	179.8	0.944E-01	17.1	0.182E-05	25.4

FIGURE 12

NATAL, 25 MARCH 1968, 1800 GMT.

ALTITUDE M MSL	TEMPERATURE DEG K	ERROR DEG K	WIND SPEED M/SEC	ERROR M/SEC	WIND DIRECTION DEGREES	ERROR DEG
36006.4	247.0	0.2	17.5	1.4	89.6	3.7
41723.6	268.8	0.4	37.7	2.9	265.3	3.5
46021.4	268.0	1.0	29.5	6.2	277.9	8.9
49603.4	270.0	1.1	24.5	6.4	285.7	10.8
53090.8	270.8	1.2	24.4	6.6	274.2	11.5
56478.7	257.1	1.3	30.9	6.7	253.2	10.7
59775.2	244.0	1.4	19.5	6.1	224.6	21.1
62981.6	237.1	1.2	24.4	6.4	260.4	12.2
66591.6	227.2	1.4	25.5	7.2	258.0	13.5
70589.9	223.4	1.5	29.8	7.9	136.8	13.3
74420.8	197.9	1.1	29.1	6.4	61.3	12.6
78094.3	184.6	1.5	54.2	10.2	67.5	10.2
81621.2	189.9	1.8	37.1	11.6	66.4	17.2
84572.3	197.5	1.9	55.8	9.9	25.9	13.8
86998.2	212.3	5.2	99.9	32.5	278.0	13.2
89305.8	176.9	4.8	10.9	34.4	90.0	138.3
91532.8	194.1	5.3	37.2	33.8	265.7	40.4
93623.5	180.8	6.2	70.1	39.5	133.1	27.8

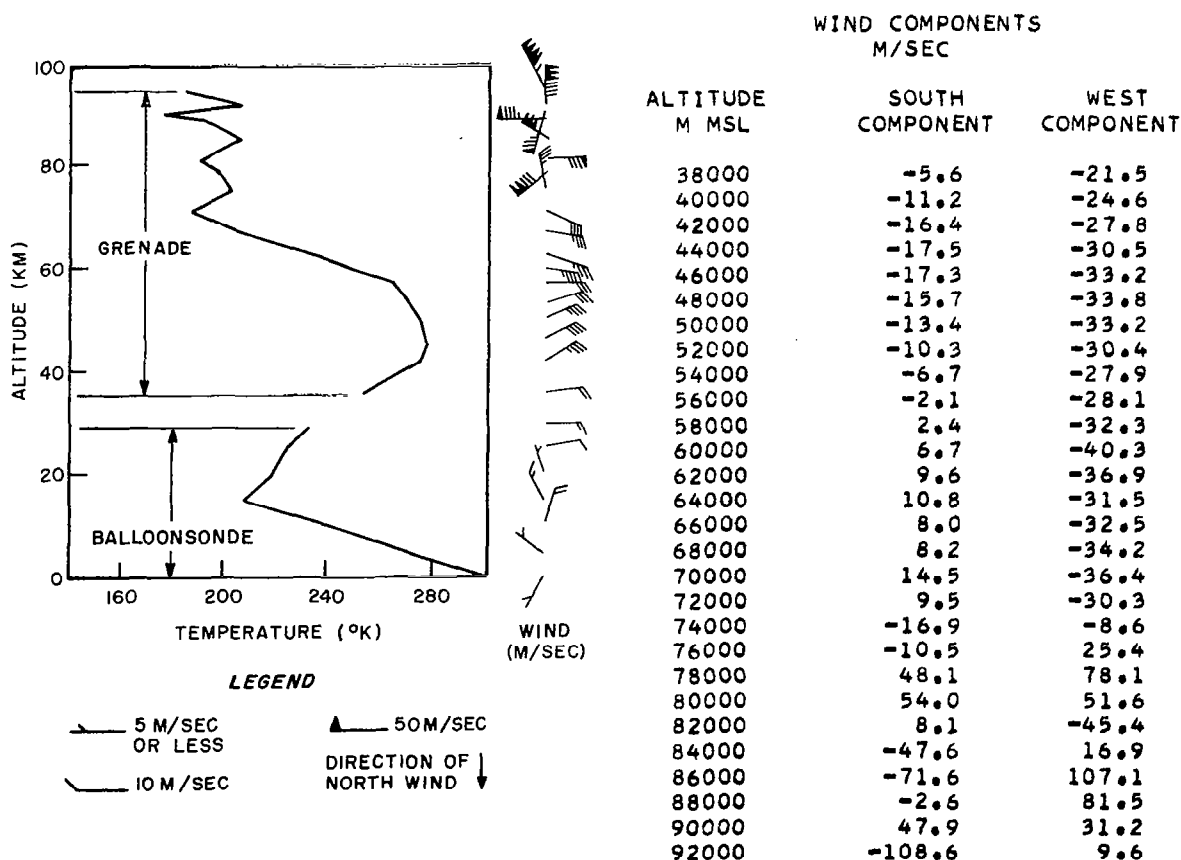


ALTITUDE M MSL	TEMPERATURE DEG K	PRESSURE NT/SQ M	DEVIATION PER CENT	DENSITY KG/CU M	DEVIATION PER CENT
37000	250.8	0.452E 03	4.4	0.628E-02	0.7
38000	254.6	0.394E 03	4.6	0.540E-02	0.6
39000	258.4	0.344E 03	4.7	0.464E-02	0.3
40000	262.2	0.303E 03	5.5	0.402E-02	0.7
41000	266.0	0.267E 03	6.5	0.350E-02	1.3
42000	268.7	0.236E 03	7.2	0.305E-02	2.1
43000	268.6	0.208E 03	7.9	0.270E-02	3.9
44000	268.4	0.183E 03	8.4	0.238E-02	5.6
45000	268.2	0.162E 03	8.7	0.210E-02	7.1
46000	268.0	0.143E 03	8.9	0.185E-02	8.4
47000	268.6	0.126E 03	8.9	0.163E-02	9.3
48000	269.1	0.111E 03	8.8	0.144E-02	9.4
49000	269.7	0.983E 02	8.9	0.127E-02	9.2
50000	270.1	0.868E 02	8.9	0.112E-02	9.0
51000	270.3	0.767E 02	8.9	0.988E-03	9.0
52000	270.6	0.678E 02	8.9	0.872E-03	8.9
53000	270.8	0.599E 02	9.0	0.770E-03	8.4
54000	267.1	0.529E 02	9.2	0.690E-03	9.3
55000	263.1	0.467E 02	9.3	0.618E-03	10.3
56000	259.0	0.410E 02	8.9	0.551E-03	10.8
57000	255.0	0.360E 02	8.6	0.491E-03	11.4
58000	251.0	0.316E 02	8.5	0.438E-03	12.2
59000	247.1	0.275E 02	7.8	0.389E-03	12.4
60000	243.5	0.240E 02	7.1	0.344E-03	12.5
61000	241.4	0.209E 02	6.5	0.302E-03	12.0
62000	239.2	0.182E 02	5.8	0.265E-03	11.0
63000	237.1	0.158E 02	5.1	0.232E-03	9.6
64000	234.3	0.137E 02	4.7	0.204E-03	8.6
65000	231.6	0.119E 02	4.2	0.179E-03	7.6
66000	228.8	0.103E 02	3.6	0.156E-03	6.6
67000	226.8	0.889E 01	3.2	0.136E-03	5.4
68000	225.9	0.768E 01	3.2	0.118E-03	3.9
69000	224.9	0.662E 01	3.2	0.102E-03	2.6
70000	223.9	0.570E 01	3.4	0.888E-04	1.4
71000	220.6	0.491E 01	3.8	0.776E-04	1.5
72000	214.0	0.423E 01	4.6	0.690E-04	3.6
73000	207.3	0.361E 01	4.7	0.608E-04	5.0
74000	200.7	0.305E 01	4.1	0.530E-04	5.8
75000	195.8	0.258E 01	3.8	0.459E-04	6.1
76000	192.2	0.218E 01	3.8	0.396E-04	6.0
77000	188.5	0.183E 01	3.3	0.338E-04	5.4
78000	184.9	0.152E 01	2.8	0.288E-04	4.7
79000	185.9	0.127E 01	2.6	0.239E-04	1.8
80000	187.4	0.106E 01	2.9	0.198E-04	-0.7
81000	189.0	0.896E 00	4.0	0.165E-04	-0.5
82000	190.9	0.752E 00	4.9	0.137E-04	-0.6
83000	193.4	0.631E 00	5.9	0.113E-04	-1.0
84000	196.0	0.533E 00	7.5	0.947E-05	-0.9
85000	200.1	0.450E 00	9.2	0.784E-05	-1.4
86000	206.2	0.381E 00	11.3	0.645E-05	-2.5
87000	212.1	0.326E 00	14.4	0.536E-05	-2.5
88000	196.8	0.279E 00	17.8	0.495E-05	8.1
89000	181.5	0.232E 00	17.9	0.446E-05	17.3
90000	182.2	0.193E 00	17.4	0.369E-05	16.4
91000	190.0	0.161E 00	18.0	0.296E-05	14.1
92000	191.1	0.136E 00	19.1	0.248E-05	16.3
93000	184.7	0.114E 00	19.2	0.215E-05	22.4

FIGURE 13

WALLOPS, 24 JULY 1968, 0046 GMT.

ALTITUDE M MSL	TEMPERATURE DEG K	ERROR DEG K	WIND SPEED M/SEC	ERROR M/SEC	WIND DIRECTION DEGREES	ERROR DEG
36615.9	255.9	0.8	19.4	0.6	84.5	3.7
42350.4	275.2	1.3	33.4	1.4	58.0	3.2
46656.1	278.8	1.7	38.2	1.8	63.1	4.1
50224.2	276.3	1.2	35.9	1.3	68.3	3.5
53709.2	272.5	1.1	28.6	1.1	74.6	4.3
57114.1	264.2	0.9	28.4	1.0	91.0	3.8
60429.8	247.1	0.7	43.5	1.1	100.2	2.4
63658.2	236.2	0.8	32.8	1.4	110.7	3.6
67316.2	205.9	0.6	34.0	1.1	100.1	3.2
71349.2	187.6	0.7	42.3	1.9	116.4	3.2
75237.4	202.7	1.0	34.1	4.0	351.4	3.4
78980.9	199.3	1.2	129.6	3.8	233.4	2.5
82548.0	192.0	1.2	79.8	4.0	87.1	5.1
85540.4	207.3	1.7	151.9	8.8	308.1	2.7
88008.1	193.4	2.3	84.8	7.6	270.5	8.6
90392.8	177.6	2.7	76.0	15.3	193.9	8.6
92684.1	207.9	6.0	190.5	32.5	358.6	5.2
94828.1	184.6	5.3	204.1	31.7	335.4	4.5

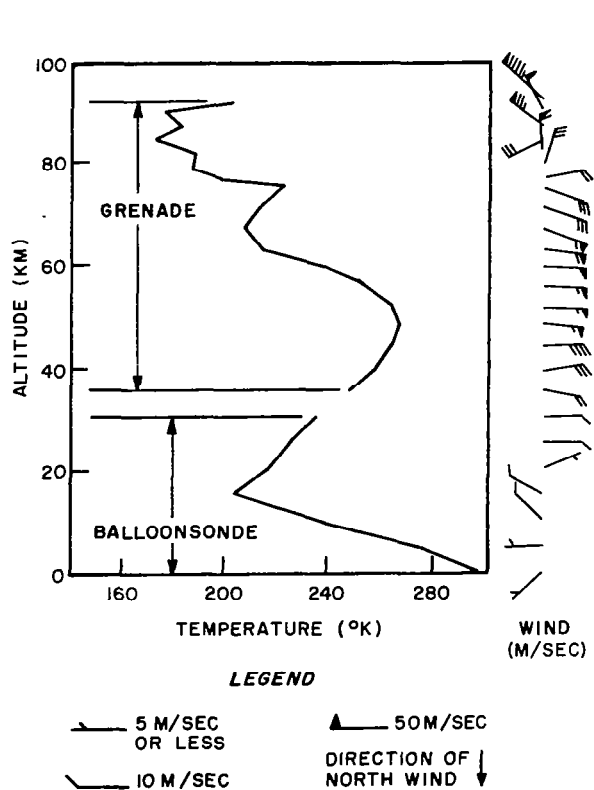


ALTITUDE M MSL	TEMPERATURE DEG K	PRESSURE NT/SQ M	DEVIATION PER CENT	DENSITY KG/CU M	DEVIATION PER CENT
37000	257.2	0.515E 03	19.0	0.698E-02	11.9
38000	260.6	0.452E 03	19.8	0.604E-02	12.5
39000	264.0	0.396E 03	20.5	0.522E-02	13.0
40000	267.3	0.347E 03	21.1	0.453E-02	13.4
41000	270.7	0.307E 03	22.5	0.396E-02	14.6
42000	274.0	0.272E 03	23.7	0.346E-02	15.5
43000	275.7	0.240E 03	24.8	0.304E-02	17.1
44000	276.6	0.213E 03	25.7	0.268E-02	18.8
45000	277.4	0.188E 03	26.5	0.236E-02	20.5
46000	278.3	0.167E 03	27.3	0.209E-02	22.1
47000	278.6	0.148E 03	27.9	0.185E-02	23.8
48000	277.9	0.131E 03	28.4	0.164E-02	25.0
49000	277.2	0.116E 03	28.8	0.146E-02	25.7
50000	276.5	0.103E 03	29.2	0.129E-02	26.4
51000	275.5	0.912E 02	29.5	0.115E-02	27.2
52000	274.4	0.808E 02	29.8	0.102E-02	28.1
53000	273.3	0.714E 02	30.0	0.910E-03	28.2
54000	271.8	0.631E 02	30.2	0.809E-03	28.2
55000	269.4	0.558E 02	30.6	0.722E-03	28.8
56000	266.9	0.492E 02	30.8	0.643E-03	29.2
57000	264.5	0.434E 02	30.9	0.571E-03	29.5
58000	259.7	0.382E 02	31.2	0.512E-03	31.2
59000	254.5	0.336E 02	31.3	0.460E-03	33.0
60000	249.3	0.293E 02	30.7	0.410E-03	34.0
61000	245.2	0.256E 02	30.2	0.364E-03	34.7
62000	241.8	0.223E 02	29.8	0.322E-03	34.7
63000	238.4	0.194E 02	28.9	0.284E-03	33.6
64000	233.4	0.168E 02	28.3	0.251E-03	33.6
65000	225.1	0.146E 02	27.9	0.226E-03	35.9
66000	216.8	0.125E 02	25.9	0.201E-03	36.6
67000	208.6	0.106E 02	23.5	0.177E-03	37.1
68000	202.8	0.904E 01	21.5	0.155E-03	36.3
69000	198.3	0.769E 01	19.8	0.135E-03	35.1
70000	193.7	0.647E 01	17.3	0.116E-03	33.0
71000	189.2	0.542E 01	14.5	0.998E-04	30.5
72000	190.1	0.453E 01	12.0	0.831E-04	24.8
73000	194.0	0.379E 01	10.0	0.682E-04	17.8
74000	197.9	0.320E 01	9.2	0.564E-04	12.6
75000	201.8	0.272E 01	9.3	0.470E-04	8.4
76000	202.0	0.231E 01	9.7	0.398E-04	6.6
77000	201.1	0.196E 01	10.5	0.339E-04	5.7
78000	200.2	0.165E 01	11.5	0.288E-04	4.9
79000	199.3	0.140E 01	12.8	0.245E-04	4.4
80000	197.2	0.118E 01	14.5	0.209E-04	4.9
81000	195.2	0.100E 01	16.4	0.179E-04	7.8
82000	193.1	0.844E 00	17.7	0.152E-04	10.1
83000	194.3	0.710E 00	19.1	0.127E-04	10.6
84000	199.4	0.597E 00	20.4	0.104E-04	9.0
85000	204.5	0.506E 00	22.9	0.863E-05	8.5
86000	204.7	0.431E 00	25.8	0.734E-05	11.0
87000	199.0	0.367E 00	28.6	0.642E-05	16.7
88000	193.4	0.309E 00	30.1	0.556E-05	21.5
89000	186.8	0.260E 00	31.8	0.485E-05	27.4
90000	180.2	0.216E 00	31.8	0.419E-05	32.1
91000	185.6	0.179E 00	31.2	0.337E-05	29.8
92000	198.9	0.151E 00	31.9	0.264E-05	23.7
93000	204.5	0.128E 00	34.1	0.219E-05	24.4
94000	193.6	0.109E 00	35.5	0.196E-05	34.8

FIGURE 14

WALLOPS, 24 JULY 1968, 1020 GMT.

ALTITUDE M MSL	TEMPERATURE DEG K	ERROR DEG K	WIND SPEED M/SEC	ERROR M/SEC	WIND DIRECTION DEGREES	ERROR DEG
35479.6	247.9	0.9	19.1	0.8	101.1	4.1
39947.4	259.6	0.8	28.5	0.8	82.0	2.9
44247.2	265.7	0.8	39.9	0.8	91.1	2.3
48370.8	268.3	0.9	55.5	1.0	98.0	1.8
52328.9	264.3	0.8	52.8	0.9	93.7	1.9
56134.4	253.7	0.6	56.4	0.8	95.2	1.5
59782.7	238.0	0.7	52.4	1.3	96.9	2.4
63682.7	213.3	0.6	60.3	1.3	101.0	2.0
67794.2	207.6	0.6	58.8	1.5	111.6	2.0
71301.6	212.7	0.7	31.9	1.9	109.2	4.9
74244.7	221.5	0.8	30.9	2.1	109.2	5.6
77042.0	199.7	0.6	18.1	1.6	81.5	9.8
79679.3	188.4	0.7	28.7	3.6	16.4	4.8
82142.8	189.2	0.7	59.9	4.2	358.7	2.1
84451.5	174.0	0.4	29.7	2.3	244.9	7.8
86866.6	184.2	0.3	76.8	2.9	308.1	2.0
89341.1	178.1	0.4	49.0	3.6	326.8	2.7
91340.9	202.8	1.0	92.6	7.3	318.1	3.4



WIND COMPONENTS M/SEC

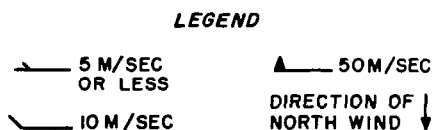
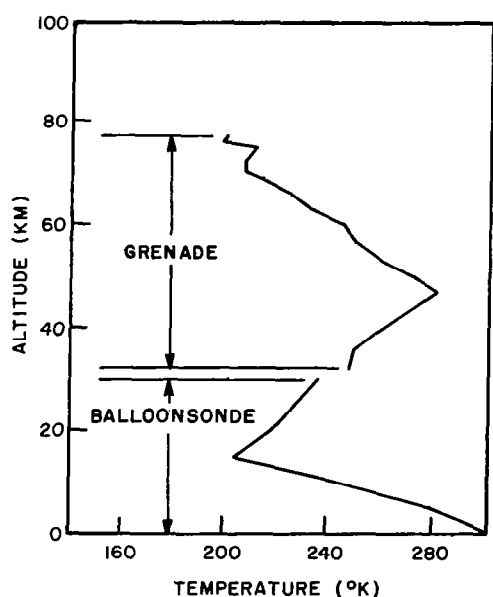
ALTITUDE M MSL	SOUTH COMPONENT	WEST COMPONENT
37000	1.1	-22.0
39000	-2.3	-26.2
41000	-2.7	-31.1
43000	-0.5	-36.5
45000	2.0	-42.6
47000	5.4	-49.9
49000	6.9	-54.5
51000	4.9	-53.5
53000	3.8	-53.4
55000	4.6	-55.2
57000	5.4	-55.2
59000	6.0	-53.0
61000	7.9	-54.3
63000	10.7	-57.9
65000	14.8	-57.7
67000	19.6	-55.4
69000	17.8	-46.2
71000	11.8	-33.1
73000	10.3	-29.6
75000	6.6	-26.1
77000	-3.5	-18.1
79000	-21.2	-10.6
81000	-44.8	-3.0
83000	-32.7	10.8
85000	-3.9	34.6
87000	-41.9	53.4
89000	-43.7	34.8

ALTITUDE M MSL	TEMPERATURE DEG K	PRESSURE NT/SQ M	DEVIATION PER CENT	DENSITY KG/CU M	DEVIATION PER CENT
36000	249.3	0.613E 03	23.0	0.857E-02	18.1
37000	251.9	0.595E 03	23.6	0.740E-02	18.7
38000	254.5	0.468E 03	24.1	0.640E-02	19.3
39000	257.1	0.411E 03	25.0	0.556E-02	20.3
40000	259.7	0.360E 03	25.7	0.484E-02	21.1
41000	261.1	0.317E 03	26.2	0.422E-02	22.3
42000	262.5	0.278E 03	26.5	0.369E-02	23.3
43000	263.9	0.245E 03	27.0	0.323E-02	24.5
44000	265.3	0.216E 03	27.4	0.283E-02	25.5
45000	266.1	0.190E 03	27.6	0.249E-02	26.6
46000	266.8	0.167E 03	27.6	0.218E-02	27.7
47000	267.4	0.147E 03	27.5	0.192E-02	28.6
48000	268.0	0.130E 03	27.4	0.169E-02	28.6
49000	267.6	0.115E 03	27.3	0.149E-02	28.7
50000	266.6	0.101E 03	27.2	0.132E-02	29.1
51000	265.6	0.894E 02	26.9	0.117E-02	29.3
52000	264.6	0.787E 02	26.6	0.103E-02	29.4
53000	262.4	0.693E 02	26.2	0.921E-03	29.6
54000	259.6	0.611E 02	26.0	0.819E-03	29.8
55000	256.9	0.536E 02	25.4	0.727E-03	29.6
56000	254.1	0.469E 02	24.7	0.644E-03	29.4
57000	250.0	0.411E 02	24.2	0.573E-03	30.0
58000	245.7	0.360E 02	23.7	0.511E-03	30.8
59000	241.4	0.313E 02	22.4	0.452E-03	30.7
60000	236.6	0.272E 02	21.1	0.400E-03	30.9
61000	230.3	0.236E 02	20.1	0.357E-03	32.3
62000	224.0	0.204E 02	18.2	0.317E-03	32.5
63000	217.6	0.174E 02	15.6	0.279E-03	31.3
64000	212.9	0.149E 02	13.3	0.243E-03	29.4
65000	211.5	0.127E 02	11.3	0.209E-03	25.9
66000	210.1	0.108E 02	9.5	0.180E-03	22.6
67000	208.7	0.926E 01	7.6	0.154E-03	19.3
68000	207.9	0.789E 01	5.9	0.132E-03	15.9
69000	209.3	0.671E 01	4.6	0.111E-03	11.7
70000	210.8	0.572E 01	3.6	0.945E-04	8.0
71000	212.2	0.489E 01	3.3	0.802E-04	5.0
72000	214.8	0.418E 01	3.2	0.678E-04	1.8
73000	217.8	0.357E 01	3.6	0.572E-04	-1.0
74000	220.8	0.307E 01	4.8	0.485E-04	-3.1
75000	215.6	0.264E 01	6.4	0.427E-04	-1.2
76000	207.8	0.226E 01	7.6	0.379E-04	1.6
77000	200.0	0.191E 01	8.2	0.334E-04	4.0
78000	195.6	0.162E 01	9.1	0.289E-04	5.1
79000	191.3	0.136E 01	9.8	0.248E-04	5.9
80000	188.5	0.114E 01	10.4	0.211E-04	5.8
81000	188.8	0.959E 00	11.3	0.177E-04	6.5
82000	189.2	0.805E 00	12.2	0.148E-04	7.2
83000	183.5	0.675E 00	13.2	0.128E-04	11.4
84000	176.9	0.560E 00	13.0	0.110E-04	15.4
85000	176.3	0.463E 00	12.2	0.915E-05	15.0
86000	180.5	0.384E 00	12.0	0.741E-05	12.1
87000	183.8	0.321E 00	12.4	0.608E-05	10.5
88000	181.4	0.268E 00	12.8	0.514E-05	12.4
89000	178.9	0.222E 00	12.7	0.433E-05	13.8
90000	186.2	0.184E 00	12.4	0.345E-05	9.0
91000	198.6	0.155E 00	13.2	0.272E-05	4.7

FIGURE 15

WALLOPS, 24 JULY 1968, 2155 GMT.

ALTITUDE M MSL	TEMPERATURE DEG K	ERROR DEG K	WIND SPEED M/SEC	ERROR M/SEC	WIND DIRECTION DEGREES	ERROR DEG
32542.1	247.3	1.2	13.9	1.0	83.1	8.6
36603.4	250.8	0.9	19.8	1.2	103.9	5.6
40421.4	261.8	0.8	31.7	0.9	88.6	3.5
44013.7	275.8	0.9	41.6	1.2	96.4	3.0
47521.8	280.9	1.0	41.7	1.2	81.7	3.5
50830.2	274.6	0.9	44.6	1.3	90.2	3.2
53950.2	261.5	0.8	47.4	1.2	82.1	2.8
57290.0	250.6	0.7	50.8	1.2	79.7	2.6
60767.9	245.8	0.7	55.8	1.5	101.3	2.4
63780.1	233.7	0.6	51.0	1.8	119.3	2.3
66235.4	225.3	0.7	33.6	1.5	95.7	4.7
68428.7	214.3	0.7	66.9	1.5	90.1	2.5
70514.0	208.2	0.7	54.1	1.5	88.4	3.1
72467.2	208.7	0.8	44.5	2.2	53.0	4.1
74257.2	212.2	1.1	8.3	3.4	118.5	26.5
76062.1	200.9	0.8	36.7	2.8	117.1	5.0
77851.1	201.2	0.8	81.6	3.0	128.7	2.0

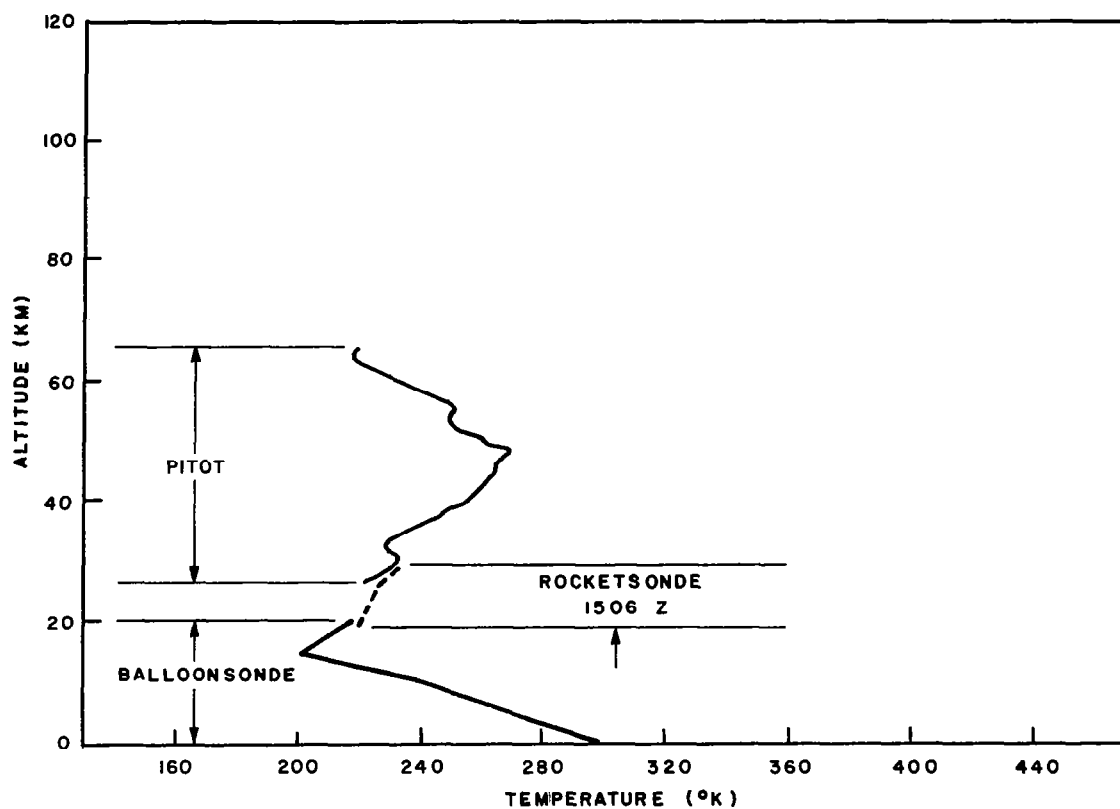


WIND COMPONENTS M/SEC

ALTITUDE M MSL	SOUTH COMPONENT	WEST COMPONENT
34000	0.6	-15.8
36000	3.7	-18.5
38000	2.7	-23.8
40000	0.1	-30.3
42000	1.6	-35.9
44000	3.5	-40.7
46000	-1.3	-41.3
48000	-4.7	-41.8
50000	-1.4	-43.8
52000	-2.3	-45.5
54000	-6.2	-47.0
56000	-8.0	-48.8
58000	-4.7	-51.0
60000	6.5	-53.6
62000	16.7	-50.5
64000	21.0	-43.2
66000	6.5	-37.3
68000	0.8	-58.6
70000	-1.7	-57.1
72000	-18.5	-39.5
74000	-1.8	-15.5
76000	18.9	-32.5

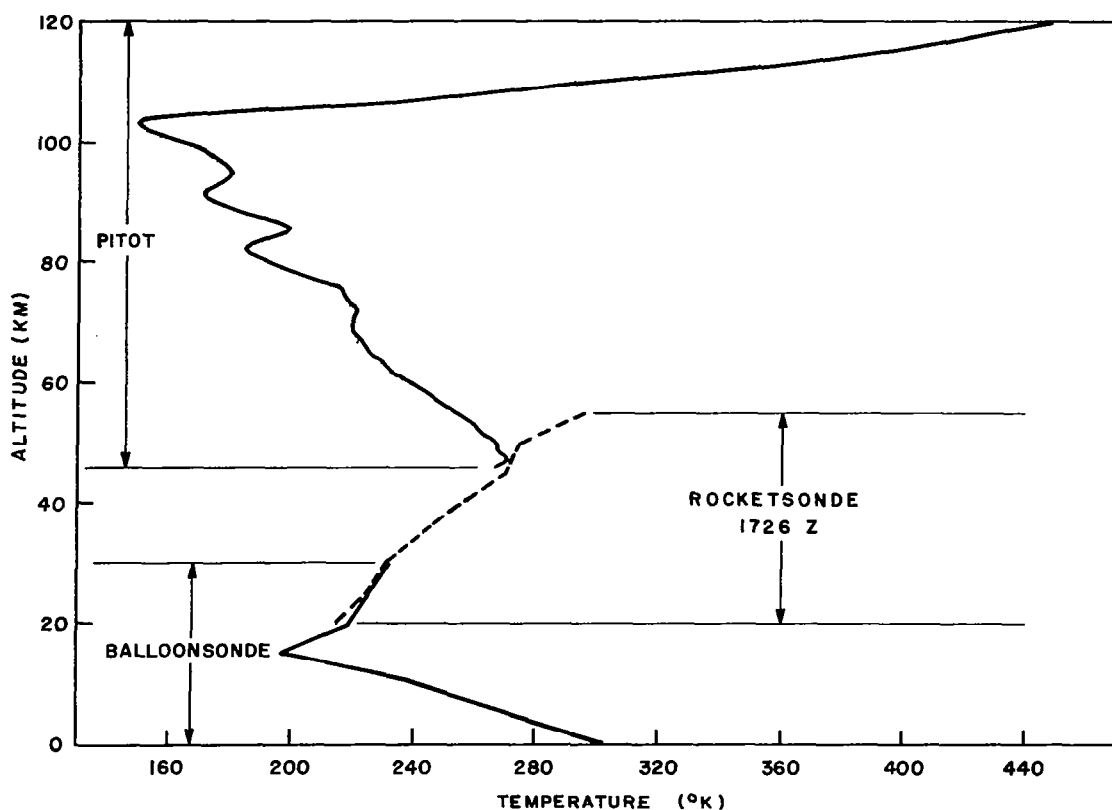
ALTITUDE M MSL	TEMPERATURE DEG K	PRESSURE NT/SQ M	DEVIATION PER CENT	DENSITY KG/CU M	DEVIATION PER CENT
33000	247.7	0.950E 03	23.9	0.133E-01	15.5
34000	248.6	0.829E 03	25.0	0.116E-01	17.5
35000	249.4	0.724E 03	26.0	0.101E-01	19.4
36000	250.3	0.632E 03	26.9	0.880E-02	21.3
37000	251.9	0.553E 03	27.7	0.764E-02	22.6
38000	254.8	0.483E 03	28.2	0.661E-02	23.1
39000	257.7	0.423E 03	28.8	0.572E-02	23.7
40000	260.5	0.372E 03	29.7	0.498E-02	24.6
41000	264.0	0.327E 03	30.4	0.432E-02	25.0
42000	267.9	0.287E 03	30.8	0.374E-02	24.9
43000	271.8	0.254E 03	31.8	0.326E-02	25.4
44000	275.7	0.225E 03	32.8	0.284E-02	25.9
45000	277.2	0.199E 03	33.7	0.250E-02	27.3
46000	278.7	0.176E 03	34.4	0.220E-02	28.7
47000	280.1	0.156E 03	35.1	0.194E-02	30.0
48000	280.0	0.138E 03	35.8	0.172E-02	31.2
49000	278.1	0.123E 03	36.4	0.154E-02	32.7
50000	276.2	0.109E 03	36.8	0.137E-02	34.0
51000	273.9	0.965E 02	37.0	0.122E-02	35.4
52000	269.7	0.854E 02	37.3	0.110E-02	37.8
53000	265.5	0.753E 02	37.1	0.988E-03	39.1
54000	261.4	0.662E 02	36.6	0.883E-03	39.8
55000	258.1	0.583E 02	36.3	0.786E-03	40.3
56000	254.8	0.511E 02	35.7	0.698E-03	40.4
57000	251.6	0.447E 02	34.9	0.619E-03	40.3
58000	249.6	0.391E 02	34.3	0.546E-03	39.6
59000	248.3	0.342E 02	33.8	0.480E-03	38.8
60000	246.9	0.298E 02	33.0	0.421E-03	37.8
61000	244.8	0.260E 02	32.4	0.370E-03	37.2
62000	240.8	0.227E 02	31.9	0.329E-03	37.5
63000	236.8	0.197E 02	31.1	0.290E-03	36.9
64000	232.9	0.171E 02	30.3	0.256E-03	36.0
65000	229.5	0.148E 02	29.7	0.225E-03	35.2
66000	226.1	0.128E 02	28.9	0.197E-03	34.2
67000	221.4	0.110E 02	28.2	0.173E-03	34.1
68000	216.4	0.948E 01	27.3	0.152E-03	33.8
69000	212.6	0.811E 01	26.3	0.132E-03	32.8
70000	209.7	0.692E 01	25.4	0.115E-03	31.4
71000	208.3	0.589E 01	24.5	0.986E-04	29.0
72000	208.6	0.502E 01	24.1	0.839E-04	26.0
73000	209.7	0.428E 01	24.0	0.711E-04	22.9
74000	211.7	0.365E 01	24.4	0.601E-04	19.9
75000	207.5	0.312E 01	25.5	0.524E-04	21.0
76000	201.3	0.265E 01	25.9	0.458E-04	22.7
77000	201.1	0.224E 01	26.6	0.388E-04	21.1

FIGURE 16
WALLOPS, 8 AUGUST 1968, 1935 GMT.



ALTITUDE M MSL	TEMPERATURE DEG K	PRESSURE NT/SQ M	DEVIATION PER CENT	DENSITY KG/CU M	DEVIATION PER CENT
27000	223.2	0.209E 04	11.3	0.327E-01	11.6
28000	227.6	0.179E 04	11.3	0.276E-01	10.0
29000	230.6	0.154E 04	11.2	0.235E-01	9.4
30000	231.7	0.133E 04	11.3	0.202E-01	9.7
31000	232.5	0.116E 04	12.6	0.174E-01	10.1
32000	229.9	0.100E 04	12.7	0.152E-01	12.0
33000	228.5	0.865E 03	12.7	0.132E-01	14.0
34000	230.3	0.746E 03	12.5	0.113E-01	14.2
35000	234.3	0.645E 03	12.3	0.960E-02	13.4
36000	240.8	0.559E 03	12.3	0.810E-02	11.6
37000	245.3	0.486E 03	12.3	0.692E-02	10.9
38000	247.9	0.423E 03	12.4	0.597E-02	11.2
39000	251.6	0.370E 03	12.7	0.514E-02	11.0
40000	255.6	0.323E 03	12.8	0.443E-02	10.8
41000	257.1	0.283E 03	13.0	0.386E-02	11.6
42000	258.5	0.249E 03	13.3	0.337E-02	12.5
43000	261.1	0.218E 03	13.2	0.293E-02	12.7
44000	262.7	0.191E 03	13.2	0.256E-02	13.3
45000	264.2	0.169E 03	13.5	0.224E-02	13.9
46000	264.5	0.149E 03	13.7	0.197E-02	14.9
47000	266.8	0.131E 03	13.5	0.172E-02	14.8
48000	267.9	0.116E 03	13.5	0.151E-02	14.6
49000	268.3	0.102E 03	13.3	0.133E-02	14.3
50000	261.8	0.901E 02	12.9	0.120E-02	16.8
51000	258.0	0.791E 02	12.3	0.107E-02	17.9
52000	252.4	0.694E 02	11.6	0.959E-03	19.7
53000	249.7	0.606E 02	10.3	0.848E-03	19.3
54000	249.8	0.530E 02	9.4	0.741E-03	17.3
55000	249.7	0.463E 02	8.5	0.648E-03	15.5
56000	351.8	0.405E 02	7.6	0.562E-03	12.9
57000	248.5	0.354E 02	7.0	0.498E-03	12.8
58000	242.6	0.309E 02	6.1	0.445E-03	13.8
59000	237.7	0.269E 02	5.2	0.395E-03	14.1
60000	234.1	0.233E 02	3.8	0.348E-03	13.7
61000	229.6	0.201E 02	2.2	0.307E-03	13.5
62000	224.4	0.173E 02	0.4	0.271E-03	13.2
63000	220.7	0.149E 02	-0.9	0.237E-03	11.5
64000	218.0	0.128E 02	-1.9	0.206E-03	9.3
65000	217.6	0.110E 02	-3.4	0.177E-03	6.1
66000	220.3	0.947E 01	-4.6	0.150E-03	1.9

FIGURE 17
WALLOPS, 9 AUGUST 1968, 0724 GMT.



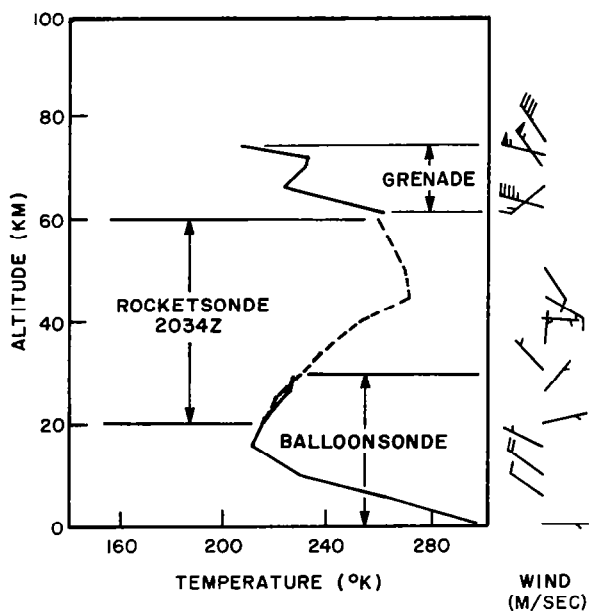
ALTITUDE M MSL	TEMPERATURE DEG K	PRESSURE NT/SQ M	DEVIATION PER CENT	DENSITY KG/CU M	DEVIATION PER CENT
46000	267.9	0.142E 03	8.6	0.186E-02	8.5
47000	271.5	0.126E 03	8.9	0.162E-02	8.2
48000	269.7	0.111E 03	8.9	0.144E-02	9.3
49000	267.7	0.982E 02	8.7	0.128E-02	10.0
50000	267.3	0.866E 02	8.6	0.113E-02	10.0
51000	263.4	0.762E 02	8.2	0.101E-02	11.3
52000	261.2	0.671E 02	7.9	0.896E-03	11.8
53000	259.1	0.589E 02	7.2	0.794E-03	11.7
54000	257.3	0.517E 02	6.6	0.702E-03	11.1
55000	254.7	0.454E 02	6.3	0.622E-03	10.9
56000	250.8	0.397E 02	5.4	0.553E-03	11.1
57000	247.9	0.347E 02	5.0	0.489E-03	10.8
58000	245.5	0.302E 02	3.8	0.431E-03	10.2
59000	242.7	0.263E 02	3.1	0.380E-03	9.8

ALTITUDE M MSL	TEMPERATURE DEG K	PRESSURE NT/SQ M	DEVIATION PER CENT	DENSITY KG/CU M	DEVIATION PER CENT
60000	238.0	0.229E 02	2.0	0.337E-03	10.1
61000	234.3	0.198E 02	0.8	0.297E-03	9.8
62000	232.8	0.171E 02	-0.2	0.259E-03	8.2
63000	230.9	0.149E 02	-0.9	0.226E-03	6.3
64000	228.9	0.129E 02	-1.5	0.197E-03	4.5
65000	226.3	0.111E 02	-2.4	0.172E-03	3.1
66000	225.3	0.962E 01	-3.1	0.149E-03	1.2
67000	222.4	0.829E 01	-3.7	0.130E-03	0.3
68000	222.0	0.713E 01	-4.1	0.112E-03	-1.7
69000	220.4	0.613E 01	-4.4	0.970E-04	-2.9
70000	220.5	0.526E 01	-4.5	0.833E-04	-4.8
71000	220.8	0.451E 01	-4.5	0.715E-04	-6.4
72000	221.0	0.389E 01	-3.8	0.614E-04	-7.7
73000	219.6	0.334E 01	-3.1	0.531E-04	-8.2
74000	218.7	0.286E 01	-2.4	0.458E-04	-8.6
75000	217.5	0.246E 01	-0.9	0.395E-04	-8.8
76000	216.0	0.210E 01	0.0	0.341E-04	-8.7
77000	209.8	0.179E 01	1.5	0.300E-04	-6.5
78000	203.8	0.153E 01	3.0	0.263E-04	-4.3
79000	196.5	0.130E 01	4.7	0.231E-04	-1.6
80000	192.1	0.109E 01	5.6	0.199E-04	-0.4
81000	187.6	0.919E 00	6.7	0.171E-04	2.8
82000	184.9	0.769E 00	7.3	0.145E-04	4.9
83000	186.7	0.642E 00	7.7	0.120E-04	4.3
84000	190.6	0.537E 00	8.3	0.984E-05	2.8
85000	198.9	0.453E 00	9.8	0.795E-05	-0.0
86000	199.3	0.383E 00	11.9	0.672E-05	1.5
87000	194.1	0.323E 00	13.5	0.583E-05	5.9
88000	185.9	0.271E 00	14.5	0.511E-05	11.5
89000	181.3	0.226E 00	14.7	0.437E-05	14.6
90000	176.0	0.187E 00	14.3	0.374E-05	17.9
91000	172.6	0.155E 00	13.8	0.315E-05	21.2
92000	171.7	0.128E 00	12.2	0.261E-05	22.1
93000	174.6	0.106E 00	10.5	0.212E-05	20.2
94000	178.2	0.878E-01	8.8	0.172E-05	17.8
95000	180.7	0.730E-01	7.4	0.141E-05	16.4
96000	178.1	0.607E-01	5.7	0.119E-05	18.0
97000	176.6	0.503E-01	3.4	0.995E-06	18.2
98000	173.6	0.417E-01	0.8	0.838E-06	18.9
99000	170.7	0.343E-01	-2.3	0.703E-06	18.9
100000	164.9	0.282E-01	-6.0	0.597E-06	20.0
101000	157.5	0.229E-01	-10.9	0.509E-06	22.3
102000	153.1	0.185E-01	-16.2	0.423E-06	21.0
103000	150.0	0.149E-01	-21.6	0.347E-06	17.8
104000	152.6	0.119E-01	-27.2	0.274E-06	9.9
105000	165.3	0.971E-02	-32.1	0.205E-06	-3.1
106000	196.9	0.807E-02	-35.1	0.143E-06	-20.7
107000	232.3	0.693E-02	-36.2	0.104E-06	-32.5
108000	254.0	0.605E-02	-36.4	0.830E-07	-37.2
109000	274.5	0.533E-02	-36.1	0.678E-07	-40.4
110000	292.1	0.474E-02	-35.4	0.567E-07	-42.3
111000	311.2	0.425E-02	-34.5	0.477E-07	-42.9
112000	332.5	0.383E-02	-33.3	0.403E-07	-43.6
113000	352.7	0.349E-02	-31.9	0.345E-07	-43.9
114000	372.9	0.318E-02	-30.6	0.298E-07	-43.9
115000	392.0	0.291E-02	-29.1	0.260E-07	-43.7
116000	406.4	0.269E-02	-27.4	0.231E-07	-42.7
117000	418.7	0.247E-02	-26.1	0.207E-07	-41.4
118000	431.2	0.229E-02	-24.6	0.186E-07	-40.2
119000	440.1	0.213E-02	-22.8	0.169E-07	-38.5
120000	448.4	0.197E-02	-21.7	0.154E-07	-36.7

FIGURE 18

WALLOPS, 16 SEPTEMBER 1968, 1712 GMT.

ALTITUDE M MSL	TEMPERATURE DEG K	ERROR DEG K	WIND SPEED M/SEC	ERROR M/SEC	WIND DIRECTION DEGREES	ERROR DEG
62144.4	262.1	7.9	43.1	16.2	287.2	175.6
66636.1	223.3	10.4	14.6	182.0	230.8	595.2
69495.2	232.0	10.4	55.8	171.7	325.9	176.0
72256.8	233.8	10.2	57.0	17.4	283.1	246.6
74965.8	207.4	8.5	41.5	168.9	326.6	225.7



LEGEND

- 5 M/SEC OR LESS
- 10 M/SEC
- ▲ 50 M/SEC
- ↓ DIRECTION OF NORTH WIND

WIND COMPONENTS M/SEC

ALTITUDE M MSL	SOUTH COMPONENT	WEST COMPONENT
64000	-3.6	28.9
66000	5.3	16.0
68000	-17.2	20.8
70000	-38.2	35.8
72000	-18.8	50.4

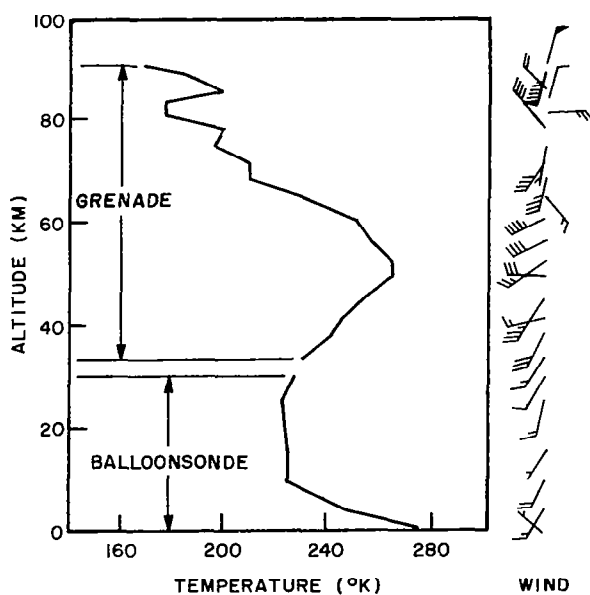
ALTITUDE M MSL	TEMPERATURE DEG K	PRESSURE NT/SQ M	DEVIATION PER CENT	DENSITY KG/CU M	DEVIATION PER CENT
63000	254.7	0.163E 02	8.2	0.223E-03	5.0
64000	246.1	0.143E 02	9.3	0.203E-03	7.9
65000	237.4	0.126E 02	10.5	0.185E-03	11.3
66000	228.8	0.109E 02	9.9	0.166E-03	13.1
67000	224.4	0.941E 01	9.2	0.146E-03	12.7
68000	227.4	0.810E 01	8.8	0.124E-03	8.8
69000	230.5	0.701E 01	9.2	0.106E-03	6.0
70000	232.3	0.607E 01	10.0	0.910E-04	4.0
71000	233.0	0.526E 01	11.1	0.786E-04	2.8
72000	233.7	0.456E 01	12.6	0.679E-04	2.1
73000	226.6	0.395E 01	14.5	0.608E-04	5.0
74000	216.8	0.340E 01	15.9	0.547E-04	9.1

FIGURE 19

BARROW, 17 SEPTEMBER 1968, 2003 GMT.

ALTITUDE M MSL	TEMPERATURE DEG K	ERROR DEG K	WIND SPEED M/SEC	ERROR M/SEC	WIND DIRECTION DEGREES	ERROR DEG
34184.5	231.0	0.8	14.1	2.8	213.2	11.4
38408.7	242.2	1.9	28.7	6.3	205.6	12.1
42478.5	245.6	1.5	12.7	4.7	258.2	22.8
46417.3	254.3	2.7	34.8	8.2	214.8	13.3
50221.5	265.7	2.1	30.4	5.8	272.6	11.7
53940.6	265.0	1.9	26.2	5.4	237.0	12.4
57515.5	258.4	1.9	39.3	5.4	243.9	8.2
61445.5	251.7	3.2	45.9	8.8	242.8	11.4
65221.4	231.5	3.9	17.4	12.1	133.4	38.9
68834.8	210.7	3.1	34.9	10.7	192.7	16.5
72286.9	210.5	3.3	41.5	10.9	217.7	14.9
75615.8	196.1	3.8	6.5	13.7	189.8	113.0
78771.8	202.1	3.7	39.7	12.8	322.9	17.3
81394.3	178.5	4.9	27.3	17.3	88.3	39.6
83893.6	177.2	3.8	12.4	14.7	10.1	63.2
86598.3	199.3	6.0	19.4	20.1	300.1	58.7
89149.6	186.1	8.2	93.1	30.1	194.5	17.2
91764.5	169.0	6.4	48.0	24.5	15.1	28.5

WIND COMPONENTS M/SEC



LEGEND

— 5 M/SEC OR LESS ▲ 50 M/SEC
 — 10 M/SEC DIRECTION OF NORTH WIND ↓

ALTITUDE M MSL	SOUTH COMPONENT	WEST COMPONENT
36000	17.8	9.7
38000	23.7	11.8
40000	16.7	12.4
42000	6.1	12.6
44000	12.6	15.3
46000	24.5	19.1
48000	16.0	24.2
50000	2.1	29.0
52000	6.0	26.3
54000	13.5	23.5
56000	16.0	29.7
58000	17.7	35.8
60000	19.6	38.8
62000	19.4	32.2
64000	14.9	4.6
66000	16.8	-8.0
68000	28.9	2.9
70000	33.6	13.6
72000	31.9	22.3
74000	19.2	12.9
76000	1.4	5.2
78000	-22.0	18.0
80000	-17.2	-0.0
82000	-4.2	-20.1
84000	-11.0	-2.0
86000	-8.7	12.4
88000	45.1	20.4
90000	45.2	11.6

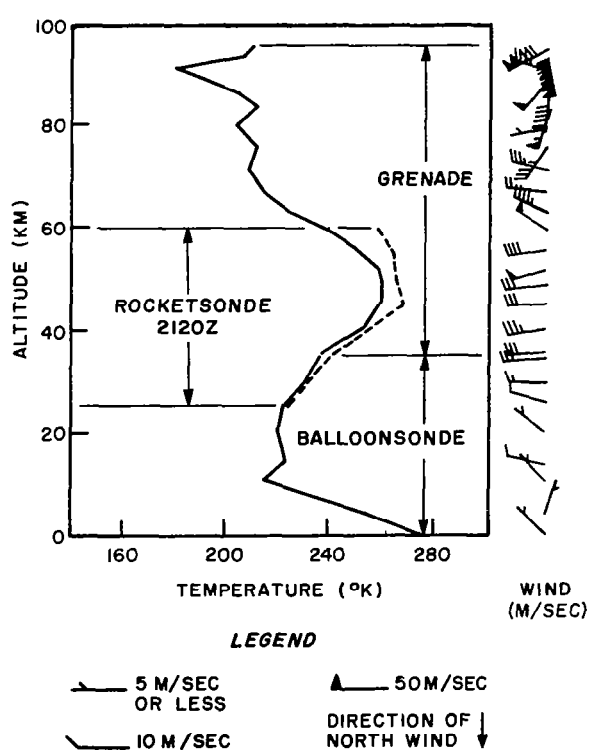
ALTITUDE M MSL	TEMPERATURE DEG K	PRESSURE NT/SQ M	DEVIATION PER CENT	DENSITY KG/CU M	DEVIATION PER CENT
35000	233.2	0.577E 03	0.5	0.863E-02	2.0
36000	235.8	0.499E 03	0.1	0.737E-02	1.5
37000	238.5	0.432E 03	-0.2	0.631E-02	1.2
38000	241.1	0.375E 03	-0.3	0.542E-02	1.1
39000	242.7	0.326E 03	-0.5	0.469E-02	1.3
40000	243.5	0.284E 03	-0.9	0.406E-02	1.7
41000	244.4	0.247E 03	-1.3	0.353E-02	2.1
42000	245.2	0.215E 03	-1.8	0.306E-02	2.3
43000	246.7	0.188E 03	-2.5	0.265E-02	2.1
44000	248.9	0.163E 03	-3.2	0.229E-02	1.5
45000	251.1	0.143E 03	-4.0	0.198E-02	0.9
46000	253.3	0.125E 03	-4.5	0.172E-02	0.5
47000	256.0	0.109E 03	-5.3	0.149E-02	-0.2
48000	259.0	0.961E 02	-6.0	0.129E-02	-1.8
49000	262.1	0.846E 02	-6.3	0.112E-02	-3.2
50000	265.1	0.745E 02	-6.5	0.979E-03	-4.6
51000	265.6	0.656E 02	-6.7	0.861E-03	-5.0
52000	265.4	0.578E 02	-7.0	0.759E-03	-5.2
53000	265.2	0.509E 02	-7.2	0.669E-03	-5.7
54000	264.9	0.448E 02	-7.4	0.590E-03	-6.5
55000	263.1	0.395E 02	-7.5	0.523E-03	-6.6
56000	261.2	0.347E 02	-7.6	0.463E-03	-6.8
57000	259.4	0.305E 02	-7.8	0.409E-03	-7.0
58000	257.6	0.268E 02	-8.0	0.362E-03	-7.2
59000	255.9	0.235E 02	-8.0	0.320E-03	-7.3
60000	254.2	0.206E 02	-8.1	0.282E-03	-7.5
61000	252.5	0.180E 02	-8.3	0.249E-03	-7.8
62000	248.7	0.158E 02	-8.4	0.221E-03	-7.5
63000	243.4	0.138E 02	-8.2	0.197E-03	-6.8
64000	238.0	0.120E 02	-8.6	0.175E-03	-6.6
65000	232.7	0.103E 02	-9.2	0.155E-03	-6.6
66000	227.0	0.899E 01	-9.5	0.137E-03	-6.2
67000	221.3	0.778E 01	-9.6	0.122E-03	-5.4
68000	215.5	0.664E 01	-10.7	0.107E-03	-5.8
69000	210.7	0.566E 01	-11.6	0.936E-04	-6.3
70000	210.7	0.483E 01	-12.4	0.799E-04	-8.6
71000	210.6	0.412E 01	-12.8	0.682E-04	-10.7
72000	210.6	0.351E 01	-13.1	0.582E-04	-12.5
73000	207.4	0.300E 01	-13.0	0.504E-04	-12.9
74000	203.1	0.256E 01	-12.8	0.439E-04	-12.4
75000	198.7	0.215E 01	-13.2	0.378E-04	-12.7
76000	196.8	0.182E 01	-13.4	0.322E-04	-13.7
77000	198.7	0.153E 01	-13.3	0.269E-04	-16.1
78000	200.6	0.130E 01	-12.6	0.225E-04	-17.9
79000	200.1	0.110E 01	-11.4	0.191E-04	-18.3
80000	191.1	0.934E 00	-9.8	0.170E-04	-14.7
81000	182.1	0.780E 00	-9.5	0.149E-04	-10.2
82000	178.2	0.647E 00	-9.7	0.126E-04	-8.4
83000	177.6	0.536E 00	-10.0	0.105E-04	-8.5
84000	178.0	0.444E 00	-10.3	0.869E-05	-9.0
85000	186.2	0.368E 00	-10.7	0.688E-05	-13.4
86000	194.4	0.309E 00	-9.7	0.554E-05	-16.1
87000	197.2	0.262E 00	-8.1	0.462E-05	-15.9
88000	192.0	0.221E 00	-6.7	0.401E-05	-12.2
89000	186.9	0.185E 00	-6.2	0.345E-05	-9.3
90000	180.5	0.154E 00	-5.7	0.298E-05	-5.7
91000	174.0	0.128E 00	-6.4	0.256E-05	-1.2

FIGURE 20

CHURCHILL, 27 SEPTEMBER 1968, 2345 GMT.

ALTITUDE M MSL	TEMPERATURE DEG K	ERROR DEG K	WIND SPEED M/SEC	ERROR M/SEC	WIND DIRECTION DEGREES	ERROR DEG
35190.5	237.8	1.4	28.1	2.8	265.6	6.3
41145.2	255.3	2.2	32.8	4.7	264.3	8.7
45609.3	260.5	2.5	28.3	5.9	268.1	12.6
49320.8	260.1	2.9	30.2	7.9	264.2	15.4
52950.6	258.9	2.9	48.6	8.2	255.9	9.7
56493.5	249.7	2.7	39.6	8.5	263.0	12.3
59948.6	239.6	2.8	47.7	9.4	302.1	11.6
63309.3	224.4	2.9	46.8	11.2	290.4	14.0
67102.7	214.5	2.5	20.4	10.4	277.8	29.8
71299.2	209.4	2.1	33.1	9.7	285.5	16.9
75330.2	212.2	1.7	34.5	8.1	216.6	13.0
79220.6	203.6	2.4	5.4	12.2	258.5	128.7
82951.6	211.1	3.3	54.9	16.5	194.1	16.7
86071.9	202.9	4.1	88.7	21.3	189.8	13.2
88641.0	188.7	9.2	49.4	49.6	220.0	55.8
91126.9	180.5	8.9	33.8	49.4	285.0	83.5
93523.1	205.9	5.8	237.9	37.3	179.5	6.6
95764.5	207.7	30.9	130.4	197.3	303.8	73.7

WIND COMPONENTS M/SEC



ALTITUDE M MSL	SOUTH COMPONENT	WEST COMPONENT
37000	2.4	29.4
39000	2.8	31.0
41000	3.0	32.2
43000	2.2	30.8
45000	1.2	28.9
47000	1.6	28.9
49000	3.0	30.4
51000	7.0	37.9
53000	10.6	45.4
55000	7.7	42.6
57000	-0.0	39.6
59000	-17.0	40.1
61000	-22.5	41.5
63000	-17.1	42.6
65000	-10.3	33.3
67000	-4.1	22.6
69000	-5.5	25.5
71000	-7.1	30.4
73000	6.5	27.1
75000	22.9	21.4
77000	16.3	14.0
79000	5.7	7.1
81000	25.9	9.2
83000	53.1	13.0
85000	75.6	14.5
87000	69.4	21.1
89000	31.1	31.3
91000	16.7	29.8
93000	170.3	9.4

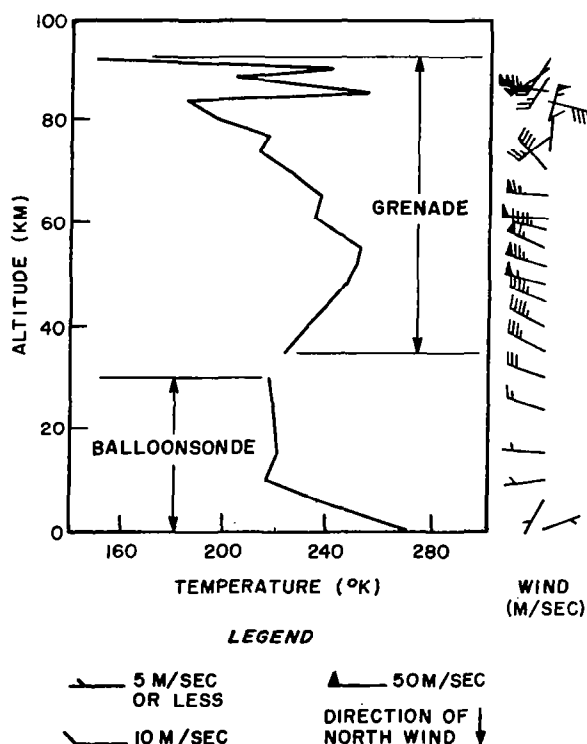
ALTITUDE M MSL	TEMPERATURE DEG K	PRESSURE NT/SQ M	DEVIATION PER CENT	DENSITY KG/CU M	DEVIATION PER CENT
36000	240.2	0.513E 03	3.0	0.744E-02	2.5
37000	243.1	0.445E 03	2.8	0.638E-02	2.3
38000	246.1	0.386E 03	2.4	0.546E-02	1.8
39000	249.0	0.336E 03	2.4	0.471E-02	1.8
40000	251.9	0.295E 03	2.7	0.407E-02	2.0
41000	254.9	0.258E 03	2.9	0.353E-02	2.2
42000	256.3	0.226E 03	2.9	0.307E-02	2.7
43000	257.4	0.198E 03	2.8	0.268E-02	3.2
44000	258.6	0.173E 03	2.6	0.234E-02	3.7
45000	259.8	0.152E 03	2.5	0.204E-02	4.2
46000	260.4	0.134E 03	2.2	0.179E-02	4.8
47000	260.3	0.118E 03	1.8	0.157E-02	5.4
48000	260.2	0.103E 03	1.3	0.138E-02	5.3
49000	260.1	0.910E 02	0.8	0.121E-02	4.8
50000	259.9	0.800E 02	0.3	0.107E-02	4.4
51000	259.5	0.703E 02	-0.2	0.943E-03	4.0
52000	259.2	0.617E 02	-0.7	0.829E-03	3.5
53000	258.8	0.542E 02	-1.3	0.729E-03	2.7
54000	256.2	0.476E 02	-1.7	0.647E-03	2.5
55000	253.6	0.417E 02	-2.2	0.573E-03	2.3
56000	251.0	0.365E 02	-3.0	0.506E-03	1.8
57000	248.2	0.319E 02	-3.6	0.447E-03	1.5
58000	245.3	0.279E 02	-4.2	0.396E-03	1.3
59000	242.4	0.242E 02	-5.0	0.349E-03	0.8
60000	239.4	0.211E 02	-5.9	0.307E-03	0.4
61000	234.8	0.183E 02	-6.7	0.272E-03	0.7
62000	230.3	0.159E 02	-7.7	0.240E-03	0.5
63000	225.8	0.136E 02	-9.1	0.211E-03	-0.5
64000	222.6	0.118E 02	-10.2	0.184E-03	-1.9
65000	220.0	0.101E 02	-11.2	0.160E-03	-3.5
66000	217.4	0.869E 01	-12.5	0.139E-03	-5.3
67000	214.8	0.743E 01	-13.6	0.120E-03	-6.9
68000	213.5	0.636E 01	-14.5	0.103E-03	-8.9
69000	212.2	0.544E 01	-15.2	0.893E-04	-10.6
70000	211.0	0.464E 01	-15.8	0.766E-04	-12.4
71000	209.8	0.395E 01	-16.4	0.657E-04	-14.0
72000	209.9	0.337E 01	-16.6	0.559E-04	-15.9
73000	210.6	0.287E 01	-16.7	0.475E-04	-17.8
74000	211.3	0.245E 01	-16.4	0.404E-04	-19.2
75000	212.0	0.209E 01	-15.7	0.344E-04	-20.4
76000	210.7	0.179E 01	-14.8	0.296E-04	-20.6
77000	208.5	0.153E 01	-13.5	0.255E-04	-20.2
78000	206.3	0.130E 01	-12.4	0.219E-04	-20.0
79000	204.1	0.110E 01	-11.0	0.188E-04	-19.6
80000	205.2	0.938E 00	-9.4	0.159E-04	-20.2
81000	207.2	0.797E 00	-7.5	0.133E-04	-19.3
82000	209.2	0.680E 00	-5.1	0.113E-04	-18.0
83000	210.9	0.580E 00	-2.5	0.959E-05	-16.5
84000	208.3	0.496E 00	0.0	0.829E-05	-13.2
85000	205.7	0.423E 00	2.5	0.716E-05	-9.9
86000	203.0	0.359E 00	4.6	0.615E-05	-6.9
87000	197.7	0.304E 00	6.8	0.537E-05	-2.4
88000	192.2	0.256E 00	8.0	0.465E-05	1.5
89000	187.5	0.215E 00	8.9	0.399E-05	4.9
90000	184.2	0.180E 00	9.7	0.340E-05	7.5
91000	181.0	0.150E 00	9.5	0.288E-05	11.1
92000	189.8	0.124E 00	8.9	0.228E-05	7.1
93000	200.3	0.105E 00	9.8	0.183E-05	3.9
94000	206.3	0.896E-01	11.1	0.151E-05	3.8
95000	207.1	0.763E-01	12.3	0.128E-05	6.0

FIGURE 21

BARROW, 14 OCTOBER 1968, 0100 GMT.

ALTITUDE M MSL	TEMPERATURE DEG K	ERROR DEG K	WIND SPEED M/SEC	ERROR M/SEC	WIND DIRECTION DEGREES	ERROR DEG
35115.2	223.2	0.1	36.2	0.4	298.1	0.7
40797.8	232.1	0.5	42.8	1.5	297.6	2.1
45067.4	241.2	1.8	43.6	4.6	294.3	6.5
48626.5	247.6	2.9	54.6	7.1	284.2	7.9
52093.5	251.9	2.8	72.5	6.6	286.4	5.4
55468.9	252.6	1.8	62.9	4.1	292.3	4.0
58747.2	240.7	1.6	43.5	3.9	284.4	5.4
61935.6	235.8	3.9	49.3	9.3	273.3	11.2
65543.3	237.8	3.1	63.5	7.3	275.0	6.8
69521.7	226.4	4.2	38.0	10.0	320.5	15.5
73350.0	213.3	4.2	10.5	11.0	3.5	54.7
77052.0	216.0	3.0	22.9	7.8	233.0	18.5
80593.9	198.2	17.1	57.3	48.7	14.5	44.7
83556.3	186.7	24.3	38.8	65.2	105.1	110.0
85992.8	255.0	25.0	125.6	56.9	277.8	25.3
88348.1	205.6	17.8	23.9	48.5	216.5	104.9
90623.9	241.7	22.2	99.4	52.9	233.3	27.0
92750.8	150.3	10.8	23.0	39.1	214.1	87.6

WIND COMPONENTS M/SEC



ALTITUDE M MSL	SOUTH COMPONENT	WEST COMPONENT
37000	-18.0	33.9
39000	-19.0	36.0
41000	-19.6	37.9
43000	-18.9	38.8
45000	-17.8	40.4
47000	-15.5	46.9
49000	-14.5	54.8
51000	-18.2	64.3
53000	-21.4	66.4
55000	-23.0	59.7
57000	-17.8	50.7
59000	-10.4	43.7
61000	-5.2	47.2
63000	-3.7	53.4
65000	-5.4	60.4
67000	-14.3	48.9
69000	-25.6	29.5
71000	-22.1	14.5
73000	-12.1	2.8
75000	0.2	7.8
77000	7.5	14.8
79000	-24.3	0.3
81000	-42.8	-17.4
83000	-3.8	-29.4
85000	-6.0	58.4
87000	-1.6	77.3
89000	30.8	35.3
91000	48.7	62.1

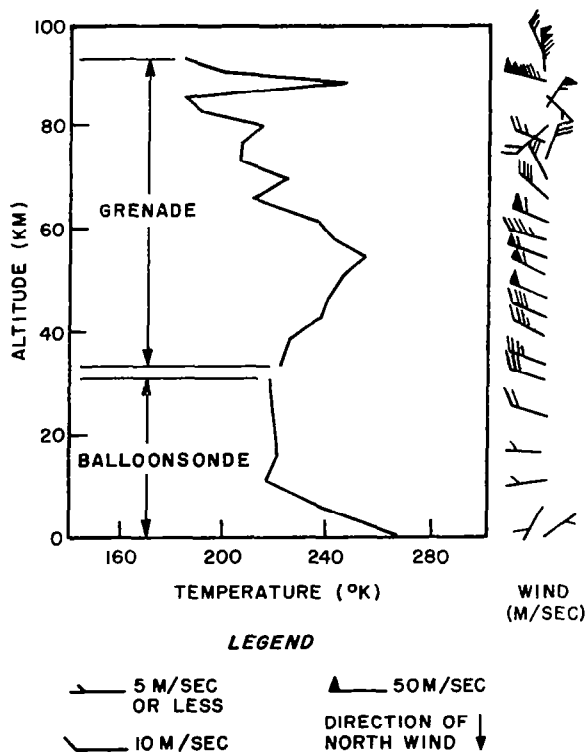
ALTITUDE M MSL	TEMPERATURE DEG K	PRESSURE NT/SQ M	DEVIATION PER CENT	DENSITY KG/CU M	DEVIATION PER CENT
36000	224.6	0.434E 03	-12.7	0.674E-02	-7.0
37000	226.1	0.373E 03	-13.7	0.575E-02	-7.6
38000	227.7	0.321E 03	-14.8	0.491E-02	-8.4
39000	229.3	0.277E 03	-15.7	0.420E-02	-9.0
40000	230.8	0.239E 03	-16.5	0.361E-02	-9.5
41000	232.5	0.207E 03	-17.5	0.310E-02	-10.2
42000	234.6	0.179E 03	-18.6	0.265E-02	-11.2
43000	236.8	0.154E 03	-19.8	0.227E-02	-12.4
44000	238.9	0.134E 03	-20.7	0.195E-02	-13.2
45000	241.1	0.116E 03	-21.6	0.168E-02	-14.1
46000	242.9	0.101E 03	-22.6	0.145E-02	-15.0
47000	244.7	0.883E 02	-23.7	0.125E-02	-15.9
48000	246.5	0.771E 02	-24.6	0.108E-02	-17.2
49000	248.1	0.673E 02	-25.5	0.944E-03	-18.7
50000	249.3	0.587E 02	-26.3	0.820E-03	-20.0
51000	250.6	0.513E 02	-27.1	0.713E-03	-21.3
52000	251.8	0.449E 02	-27.8	0.621E-03	-22.4
53000	252.1	0.392E 02	-28.4	0.542E-03	-23.5
54000	252.3	0.343E 02	-29.0	0.474E-03	-24.8
55000	252.5	0.301E 02	-29.5	0.415E-03	-25.9
56000	250.7	0.263E 02	-30.0	0.366E-03	-26.4
57000	247.0	0.230E 02	-30.3	0.325E-03	-26.2
58000	243.4	0.200E 02	-31.1	0.287E-03	-26.5
59000	240.3	0.174E 02	-31.7	0.253E-03	-26.8
60000	238.8	0.151E 02	-32.3	0.221E-03	-27.5
61000	237.2	0.131E 02	-33.0	0.193E-03	-28.3
62000	235.8	0.114E 02	-33.7	0.168E-03	-29.4
63000	236.4	0.991E 01	-34.2	0.146E-03	-31.2
64000	236.9	0.860E 01	-34.5	0.126E-03	-32.8
65000	237.5	0.747E 01	-34.7	0.109E-03	-34.2
66000	236.5	0.649E 01	-34.6	0.956E-04	-34.9
67000	233.6	0.563E 01	-34.5	0.840E-04	-35.1
68000	230.8	0.488E 01	-34.4	0.737E-04	-35.3
69000	227.9	0.421E 01	-34.3	0.643E-04	-35.6
70000	224.8	0.363E 01	-34.1	0.563E-04	-35.6
71000	221.3	0.313E 01	-33.8	0.493E-04	-35.4
72000	217.9	0.269E 01	-33.5	0.429E-04	-35.4
73000	214.5	0.229E 01	-33.4	0.373E-04	-35.4
74000	213.8	0.196E 01	-33.0	0.320E-04	-36.1
75000	214.5	0.168E 01	-32.4	0.272E-04	-37.0
76000	215.2	0.143E 01	-31.6	0.232E-04	-37.6
77000	216.0	0.123E 01	-30.4	0.198E-04	-38.0
78000	211.2	0.105E 01	-29.0	0.174E-04	-36.6
79000	206.2	0.903E 00	-27.3	0.152E-04	-35.0
80000	201.2	0.763E 00	-26.3	0.132E-04	-33.8
81000	196.6	0.645E 00	-25.1	0.114E-04	-31.2
82000	192.7	0.545E 00	-23.9	0.985E-05	-28.7
83000	188.8	0.457E 00	-23.2	0.843E-05	-26.6
84000	199.1	0.382E 00	-22.8	0.669E-05	-29.9
85000	227.1	0.323E 00	-21.5	0.495E-05	-37.6
86000	254.8	0.283E 00	-17.2	0.387E-05	-41.3
87000	233.8	0.249E 00	-12.7	0.370E-05	-32.6
88000	212.9	0.213E 00	-10.2	0.348E-05	-23.8
89000	215.9	0.181E 00	-8.2	0.292E-05	-23.2
90000	231.8	0.156E 00	-5.0	0.234E-05	-26.0
91000	225.6	0.136E 00	-0.7	0.209E-05	-19.1
92000	182.6	0.116E 00	1.3	0.221E-05	3.5

FIGURE 22

BARROW, 14 OCTOBER 1968, 0300 GMT.

ALTITUDE M MSL	TEMPERATURE DEG K	ERROR DEG K	WIND SPEED M/SEC	ERROR M/SEC	WIND DIRECTION DEGREES	ERROR DEG
33692.6	221.8	0.9	36.6	2.7	291.9	4.5
38027.7	225.7	1.0	37.2	2.9	299.0	4.7
42226.2	236.4	0.7	40.5	1.8	295.1	2.8
46292.5	240.9	0.9	47.7	2.3	294.4	3.0
50203.0	245.3	0.9	61.6	2.1	297.8	2.0
54041.2	253.3	2.4	60.9	5.5	291.0	5.4
57742.2	241.6	2.1	45.8	4.7	287.8	6.3
61805.6	235.9	2.5	59.9	5.2	293.8	8.4
65713.3	211.1	3.2	42.4	7.9	312.2	14.0
69472.0	224.2	3.8	28.9	9.1	332.6	18.1
73067.7	206.8	4.2	28.9	11.4	19.3	20.7
76523.9	207.7	13.2	24.0	32.8	293.9	83.9
79822.9	214.4	17.4	21.4	44.7	225.8	111.3
82565.1	191.1	12.3	57.4	34.3	32.8	32.2
85178.1	185.0	7.3	4.8	20.2	133.3	254.7
88022.0	246.8	14.9	186.9	35.3	287.7	10.0
90712.7	199.9	15.7	124.0	40.5	354.5	17.4
93476.2	185.3	41.5	30.5	109.7	337.5	204.3

WIND COMPONENTS M/SEC



ALTITUDE M MSL	SOUTH COMPONENT	WEST COMPONENT
35000	-15.0	33.5
37000	-17.0	32.8
39000	-17.8	33.5
41000	-17.4	35.5
43000	-17.7	38.0
45000	-18.9	41.3
47000	-21.4	45.5
49000	-26.0	51.1
51000	-27.3	54.9
53000	-23.7	56.2
55000	-19.8	53.4
57000	-15.7	46.4
59000	-17.2	47.1
61000	-22.2	52.5
63000	-25.5	47.7
65000	-27.7	35.7
67000	-27.5	25.2
69000	-26.1	15.4
71000	-26.3	3.5
73000	-26.1	-5.8
75000	-17.5	8.0
77000	-6.0	20.2
79000	8.5	16.9
81000	-12.1	-4.6
83000	-36.2	-24.4
85000	-7.0	3.5
87000	-35.3	112.7
89000	-81.2	117.5
91000	-106.1	19.5

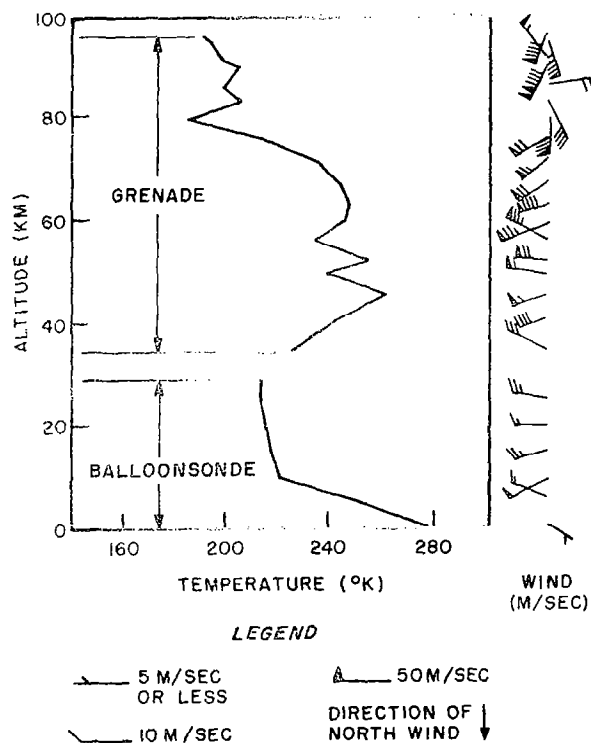
ALTITUDE M MSL	TEMPERATURE DEG K	PRESSURE NT/SQ M	DEVIATION PER CENT	DENSITY KG/CU M	DEVIATION PER CENT
34000	222.1	0.588E 03	-11.2	0.923E-02	-6.6
35000	223.0	0.505E 03	-12.0	0.789E-02	-6.7
36000	223.9	0.433E 03	-12.9	0.675E-02	-6.9
37000	224.7	0.373E 03	-13.8	0.578E-02	-7.2
38000	225.6	0.321E 03	-14.7	0.496E-02	-7.5
39000	228.1	0.276E 03	-15.8	0.422E-02	-8.7
40000	230.7	0.238E 03	-16.9	0.359E-02	-9.9
41000	233.3	0.206E 03	-17.7	0.308E-02	-10.7
42000	235.9	0.179E 03	-18.5	0.264E-02	-11.6
43000	237.3	0.155E 03	-19.5	0.227E-02	-12.3
44000	238.4	0.134E 03	-20.5	0.196E-02	-12.9
45000	239.5	0.116E 03	-21.6	0.169E-02	-13.5
46000	240.6	0.101E 03	-22.6	0.147E-02	-14.2
47000	241.7	0.882E 02	-23.8	0.127E-02	-15.0
48000	242.9	0.767E 02	-24.9	0.110E-02	-16.4
49000	244.0	0.669E 02	-25.9	0.955E-03	-17.8
50000	245.1	0.583E 02	-26.8	0.828E-03	-19.3
51000	247.0	0.508E 02	-27.8	0.716E-03	-20.9
52000	249.1	0.443E 02	-28.7	0.619E-03	-22.6
53000	251.2	0.387E 02	-29.5	0.537E-03	-24.3
54000	253.2	0.339E 02	-30.0	0.466E-03	-26.1
55000	250.3	0.296E 02	-30.5	0.413E-03	-26.3
56000	247.1	0.259E 02	-31.0	0.365E-03	-26.4
57000	244.0	0.225E 02	-31.8	0.322E-03	-26.9
58000	241.3	0.196E 02	-32.5	0.283E-03	-27.4
59000	239.8	0.170E 02	-33.1	0.248E-03	-28.2
60000	238.4	0.148E 02	-33.7	0.217E-03	-29.0
61000	237.0	0.128E 02	-34.5	0.189E-03	-29.8
62000	234.7	0.111E 02	-35.1	0.166E-03	-30.6
63000	228.3	0.970E 01	-35.6	0.148E-03	-30.3
64000	222.0	0.838E 01	-36.2	0.131E-03	-30.1
65000	215.7	0.715E 01	-37.4	0.115E-03	-30.6
66000	212.1	0.610E 01	-38.5	0.100E-03	-31.8
67000	215.6	0.520E 01	-39.5	0.841E-04	-35.0
68000	219.1	0.446E 01	-40.0	0.709E-04	-37.7
69000	222.5	0.384E 01	-40.1	0.601E-04	-39.8
70000	221.6	0.330E 01	-40.0	0.519E-04	-40.6
71000	216.8	0.284E 01	-39.8	0.457E-04	-40.0
72000	211.9	0.243E 01	-39.9	0.399E-04	-39.9
73000	207.1	0.207E 01	-40.0	0.348E-04	-39.8
74000	207.0	0.176E 01	-40.0	0.296E-04	-40.9
75000	207.3	0.149E 01	-39.8	0.251E-04	-41.9
76000	207.5	0.127E 01	-39.3	0.214E-04	-42.6
77000	208.6	0.108E 01	-38.7	0.181E-04	-43.5
78000	210.7	0.924E 00	-37.8	0.152E-04	-44.4
79000	212.7	0.790E 00	-36.4	0.129E-04	-44.8
80000	212.9	0.676E 00	-34.7	0.110E-04	-44.6
81000	204.4	0.579E 00	-32.8	0.986E-05	-40.6
82000	195.9	0.490E 00	-31.6	0.871E-05	-36.9
83000	190.1	0.411E 00	-30.9	0.754E-05	-34.4
84000	187.7	0.345E 00	-30.3	0.640E-05	-33.0
85000	185.4	0.288E 00	-30.1	0.541E-05	-31.9
86000	202.8	0.240E 00	-29.8	0.413E-05	-37.5
87000	224.6	0.204E 00	-28.3	0.316E-05	-42.4
88000	246.4	0.178E 00	-24.7	0.252E-05	-44.8
89000	229.8	0.156E 00	-20.9	0.236E-05	-37.9
90000	212.4	0.133E 00	-18.5	0.219E-05	-30.7
91000	198.4	0.113E 00	-17.2	0.198E-05	-23.4
92000	193.1	0.959E-01	-16.1	0.173E-05	-18.9
93000	187.8	0.802E-01	-16.3	0.148E-05	-15.5

FIGURE 23

CHURCHILL, 15 OCTOBER 1968, 2212 GMT.

ALTITUDE M MSL	TEMPERATURE DEG K	ERROR DEG K	WIND SPEED M/SEC	ERROR M/SEC	WIND DIRECTION DEGREES	ERROR DEG
35879.2	224.8	1.6	27.9	3.4	297.8	7.5
41800.8	243.4	2.1	37.9	4.5	248.8	6.9
46250.6	261.8	0.9	55.9	2.0	251.6	2.0
49972.6	239.5	0.7	57.4	2.0	278.8	2.1
53595.8	255.9	1.1	69.1	3.0	272.0	2.5
57130.5	236.1	1.8	74.8	5.4	298.2	4.2
60574.1	247.5	2.2	73.0	6.8	248.3	5.1
63936.0	248.0	1.8	90.1	5.5	252.0	3.3
67738.9	243.1	3.7	68.1	11.5	234.3	9.2
71932.7	238.5	3.6	66.4	11.6	228.9	9.5
75968.5	215.6	2.2	71.3	7.8	235.8	9.3
79866.0	184.4	2.4	76.8	12.8	179.9	7.2
83597.9	205.8	2.9	41.5	10.9	154.8	14.7
86725.7	199.1	4.3	17.9	16.7	81.1	55.0
89304.2	212.4	5.7	137.5	22.6	206.3	8.6
91794.2	198.9	5.4	52.4	21.5	322.6	23.4
94186.5	195.0	6.2	83.3	26.3	165.3	17.4
96424.1	190.1	10.2	90.2	45.4	198.0	27.3

WIND COMPONENTS M/SEC



ALTITUDE M MSL	SOUTH COMPONENT	WEST COMPONENT
37000	-7.9	26.7
39000	1.0	30.3
41000	10.0	33.9
43000	14.7	40.1
45000	16.5	48.0
47000	12.1	53.7
49000	-1.9	55.8
51000	-7.0	60.2
53000	-3.9	66.8
55000	-15.5	67.8
57000	-29.0	66.3
59000	-1.5	66.9
61000	25.5	70.5
63000	27.4	80.7
65000	31.0	77.2
67000	37.3	61.4
69000	40.9	53.7
71000	42.7	51.2
73000	42.6	52.4
75000	40.9	56.8
77000	49.7	43.3
79000	68.5	13.1
81000	64.9	-5.4
83000	43.7	-14.6
85000	19.5	-17.6
87000	18.7	-5.3
89000	94.5	46.5
91000	12.1	41.0
93000	19.9	5.1
95000	82.1	-2.8

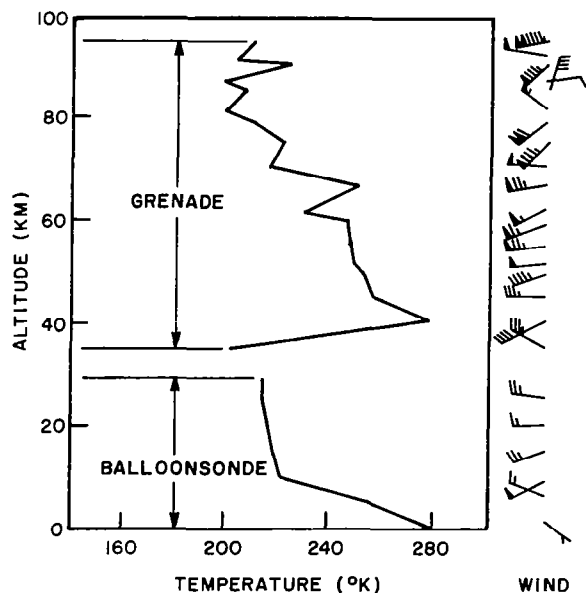
ALTITUDE M MSL	TEMPERATURE DEG K	PRESSURE NT/SQ M	DEVIATION PER CENT	DENSITY KG/CU M	DEVIATION PER CENT
36000	225.2	0.467E 03	-6.1	0.723E-02	-0.3
37000	228.3	0.402E 03	-7.1	0.613E-02	-1.5
38000	231.5	0.346E 03	-8.2	0.520E-02	-2.9
39000	234.6	0.297E 03	-9.4	0.442E-02	-4.4
40000	237.8	0.258E 03	-9.9	0.378E-02	-5.2
41000	240.9	0.225E 03	-10.3	0.325E-02	-5.8
42000	244.2	0.195E 03	-10.9	0.279E-02	-6.7
43000	248.4	0.170E 03	-11.6	0.239E-02	-7.9
44000	252.5	0.148E 03	-12.4	0.204E-02	-9.3
45000	256.6	0.130E 03	-12.7	0.176E-02	-10.1
46000	260.8	0.114E 03	-12.8	0.152E-02	-10.8
47000	257.3	0.100E 03	-13.2	0.136E-02	-9.0
48000	251.3	0.884E 02	-13.5	0.122E-02	-6.9
49000	245.3	0.769E 02	-14.8	0.109E-02	-6.0
50000	239.6	0.668E 02	-16.1	0.971E-03	-5.3
51000	244.1	0.580E 02	-17.5	0.828E-03	-8.6
52000	248.7	0.505E 02	-18.7	0.708E-03	-11.5
53000	253.2	0.443E 02	-19.3	0.609E-03	-14.1
54000	253.7	0.388E 02	-19.8	0.533E-03	-15.4
55000	248.1	0.341E 02	-20.2	0.478E-03	-14.6
56000	242.5	0.296E 02	-21.1	0.426E-03	-14.2
57000	236.9	0.257E 02	-22.2	0.378E-03	-14.1
58000	239.0	0.223E 02	-23.3	0.325E-03	-16.7
59000	242.3	0.194E 02	-24.1	0.278E-03	-19.3
60000	245.6	0.169E 02	-24.5	0.240E-03	-21.4
61000	247.5	0.147E 02	-24.8	0.208E-03	-22.9
62000	247.7	0.129E 02	-25.1	0.181E-03	-24.0
63000	247.9	0.112E 02	-25.1	0.158E-03	-25.3
64000	248.0	0.985E 01	-25.0	0.138E-03	-26.5
65000	246.7	0.861E 01	-24.7	0.121E-03	-27.0
66000	245.4	0.751E 01	-24.3	0.106E-03	-27.4
67000	244.1	0.654E 01	-23.9	0.934E-04	-27.8
68000	242.8	0.570E 01	-23.3	0.818E-04	-28.1
69000	241.7	0.497E 01	-22.5	0.716E-04	-28.3
70000	240.6	0.433E 01	-21.5	0.627E-04	-28.3
71000	239.5	0.376E 01	-20.4	0.547E-04	-28.3
72000	238.1	0.327E 01	-19.1	0.478E-04	-28.0
73000	232.4	0.284E 01	-17.5	0.426E-04	-26.2
74000	226.8	0.247E 01	-15.8	0.379E-04	-24.2
75000	221.1	0.211E 01	-14.9	0.333E-04	-23.0
76000	215.4	0.181E 01	-13.8	0.293E-04	-21.4
77000	207.4	0.155E 01	-12.2	0.261E-04	-18.6
78000	199.4	0.132E 01	-10.6	0.232E-04	-15.5
79000	191.3	0.110E 01	-10.8	0.201E-04	-14.0
80000	185.2	0.925E 00	-10.7	0.174E-04	-12.8
81000	190.9	0.772E 00	-10.4	0.140E-04	-15.2
82000	196.6	0.647E 00	-9.6	0.114E-04	-16.9
83000	202.4	0.550E 00	-7.5	0.948E-05	-17.5
84000	204.9	0.468E 00	-5.5	0.796E-05	-16.7
85000	202.8	0.398E 00	-3.3	0.684E-05	-13.9
86000	200.7	0.338E 00	-1.4	0.586E-05	-11.3
87000	200.5	0.286E 00	0.2	0.496E-05	-9.7
88000	205.7	0.241E 00	1.8	0.409E-05	-10.5
89000	210.9	0.206E 00	4.6	0.341E-05	-10.3
90000	208.6	0.176E 00	7.6	0.295E-05	-6.8
91000	203.2	0.150E 00	9.9	0.258E-05	-0.6
92000	198.5	0.127E 00	11.3	0.223E-05	4.6
93000	196.9	0.107E 00	12.3	0.190E-05	8.2
94000	195.3	0.909E-01	12.7	0.162E-05	11.1
95000	193.2	0.767E-01	12.8	0.138E-05	14.2
96000	191.0	0.645E-01	12.3	0.117E-05	16.7

FIGURE 24

CHURCHILL, 16 OCTOBER 1968, 0012 GMT.

ALTITUDE M MSL	TEMPERATURE DEG K	ERROR DEG K	WIND SPEED M/SEC	ERROR M/SEC	WIND DIRECTION DEGREES	ERROR DEG
35373.8	203.7	0.6	35.1	1.4	297.9	2.4
41194.4	278.2	1.1	37.8	2.2	244.7	3.5
45567.1	258.6	0.8	36.3	1.8	270.4	3.0
49212.3	253.8	2.4	45.4	6.9	262.3	9.0
52761.5	250.4	4.4	49.6	13.3	264.4	15.8
56214.9	249.5	4.3	76.3	13.7	260.4	10.4
59579.9	247.8	2.6	62.6	9.0	249.8	8.2
62861.6	230.9	2.5	56.8	9.7	242.6	9.7
66573.9	252.5	2.9	75.7	10.4	261.5	7.8
70671.2	218.2	2.9	49.0	12.6	273.6	14.9
74608.1	222.1	2.9	85.3	12.9	223.3	8.3
78413.2	211.0	2.4	112.4	11.1	230.7	5.4
82052.0	199.7	2.2	56.8	10.2	308.0	10.3
85097.8	208.3	3.8	40.1	18.7	17.0	26.9
87609.9	200.0	4.7	11.9	25.0	80.2	123.2
90036.6	224.1	5.6	84.5	28.5	228.8	18.8
92389.7	206.4	4.0	47.3	22.2	279.9	29.2
94582.0	209.4	8.8	143.8	44.8	259.9	27.1

WIND COMPONENTS M/SEC



LEGEND

— 5 M/SEC OR LESS
 — 10 M/SEC
 ▲ 50 M/SEC
 DIRECTION OF NORTH WIND ↓

ALTITUDE M MSL	SOUTH COMPONENT	WEST COMPONENT
37000	-7.3	31.9
39000	3.8	33.0
41000	13.5	34.1
43000	9.3	35.1
45000	2.1	36.1
47000	2.2	39.7
49000	5.3	44.3
51000	5.4	47.2
53000	5.7	52.0
55000	9.8	66.1
57000	14.7	71.2
59000	19.9	61.7
61000	23.5	55.2
63000	24.5	53.1
65000	17.4	64.5
67000	9.6	71.1
69000	2.7	59.5
71000	4.6	50.7
73000	35.4	54.6
75000	61.6	61.9
77000	67.7	76.5
79000	52.6	79.4
81000	-4.3	56.9
83000	-36.0	27.1
85000	-35.1	-6.1
87000	-10.5	-10.5
89000	31.0	31.3
91000	29.4	56.6
93000	2.6	75.0

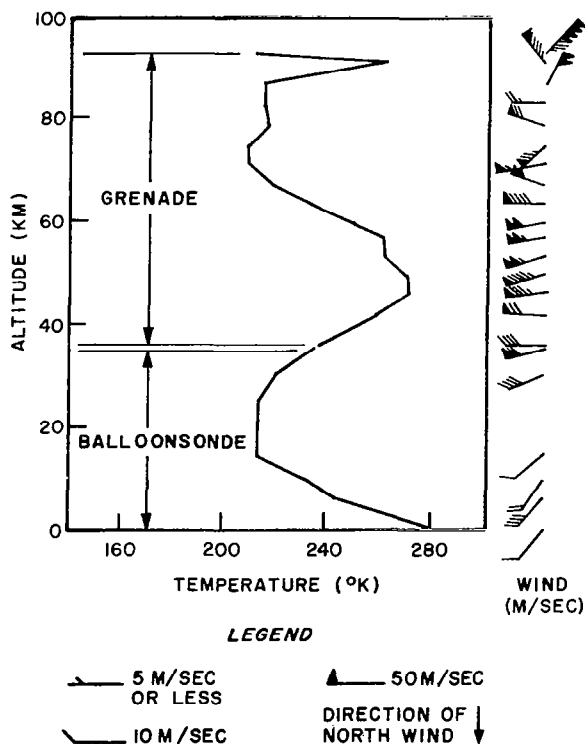
ALTITUDE M MSL	TEMPERATURE DEG K	PRESSURE NT/SQ M	DEVIATION PER CENT	DENSITY KG/CU M	DEVIATION PER CENT
36000	211.8	0.439E 03	-11.8	0.722E-02	-0.4
37000	224.5	0.372E 03	-14.0	0.577E-02	-7.4
38000	237.3	0.314E 03	-16.5	0.462E-02	-13.9
39000	250.1	0.271E 03	-17.5	0.377E-02	-18.4
40000	262.9	0.240E 03	-16.3	0.318E-02	-20.4
41000	275.7	0.212E 03	-15.3	0.268E-02	-22.2
42000	274.6	0.188E 03	-14.3	0.238E-02	-20.2
43000	270.1	0.166E 03	-13.5	0.215E-02	-17.1
44000	265.6	0.147E 03	-13.0	0.193E-02	-14.4
45000	261.2	0.129E 03	-13.2	0.172E-02	-12.2
46000	258.1	0.113E 03	-13.4	0.153E-02	-10.5
47000	256.7	0.997E 02	-13.9	0.135E-02	-9.6
48000	255.4	0.873E 02	-14.5	0.119E-02	-9.5
49000	254.1	0.765E 02	-15.2	0.104E-02	-9.7
50000	253.1	0.670E 02	-15.9	0.922E-03	-10.1
51000	252.1	0.587E 02	-16.6	0.811E-03	-10.5
52000	251.2	0.513E 02	-17.5	0.711E-03	-11.1
53000	250.4	0.448E 02	-18.3	0.624E-03	-12.1
54000	250.1	0.392E 02	-19.0	0.546E-03	-13.4
55000	249.8	0.343E 02	-19.7	0.478E-03	-14.7
56000	249.6	0.299E 02	-20.3	0.418E-03	-15.9
57000	249.1	0.262E 02	-20.9	0.366E-03	-16.9
58000	248.6	0.229E 02	-21.3	0.320E-03	-17.9
59000	248.1	0.200E 02	-21.8	0.280E-03	-18.8
60000	245.6	0.174E 02	-22.2	0.247E-03	-19.0
61000	240.5	0.152E 02	-22.4	0.221E-03	-18.2
62000	235.3	0.132E 02	-23.3	0.195E-03	-18.1
63000	231.7	0.114E 02	-24.1	0.171E-03	-19.0
64000	237.5	0.988E 01	-24.8	0.145E-03	-23.0
65000	243.3	0.861E 01	-24.7	0.123E-03	-26.0
66000	249.2	0.754E 01	-24.1	0.105E-03	-28.3
67000	249.0	0.660E 01	-23.3	0.924E-04	-28.6
68000	240.6	0.579E 01	-22.2	0.838E-04	-26.4
69000	232.2	0.503E 01	-21.5	0.754E-04	-24.5
70000	223.8	0.431E 01	-21.7	0.671E-04	-23.2
71000	218.5	0.370E 01	-21.7	0.590E-04	-22.7
72000	219.5	0.317E 01	-21.5	0.504E-04	-24.2
73000	220.5	0.272E 01	-20.9	0.431E-04	-25.5
74000	221.5	0.234E 01	-20.0	0.369E-04	-26.3
75000	221.0	0.202E 01	-18.8	0.318E-04	-26.5
76000	218.1	0.173E 01	-17.3	0.277E-04	-25.6
77000	215.2	0.149E 01	-15.9	0.241E-04	-24.8
78000	212.2	0.127E 01	-14.4	0.208E-04	-24.0
79000	209.2	0.108E 01	-12.6	0.180E-04	-22.9
80000	206.1	0.928E 00	-10.5	0.156E-04	-21.5
81000	203.0	0.787E 00	-8.6	0.135E-04	-18.7
82000	199.9	0.666E 00	-7.0	0.116E-04	-16.0
83000	202.4	0.563E 00	-5.4	0.970E-05	-15.6
84000	205.2	0.477E 00	-3.6	0.810E-05	-15.1
85000	208.0	0.407E 00	-1.2	0.681E-05	-14.2
86000	205.3	0.347E 00	1.2	0.588E-05	-10.9
87000	202.0	0.294E 00	3.2	0.507E-05	-7.7
88000	203.9	0.249E 00	5.0	0.425E-05	-6.9
89000	213.8	0.211E 00	7.2	0.345E-05	-9.3
90000	223.7	0.182E 00	11.1	0.284E-05	-10.2
91000	216.8	0.157E 00	15.0	0.253E-05	-2.5
92000	209.3	0.134E 00	17.4	0.223E-05	4.7
93000	207.2	0.114E 00	19.3	0.192E-05	9.1
94000	208.6	0.976E-01	20.9	0.162E-05	11.7

FIGURE 25

WALLOPS, 19 NOVEMBER 1968, 1800 GMT.

ALTITUDE M MSL	TEMPERATURE DEG K	ERROR DEG K	WIND SPEED M/SEC	ERROR M/SEC	WIND DIRECTION DEGREES	ERROR DEG
35686.4	237.0	0.4	40.1	0.6	269.2	1.7
41476.0	259.4	0.7	70.3	1.0	274.1	1.4
45830.9	270.8	0.8	86.9	1.1	262.6	1.3
49454.4	270.6	0.8	94.6	1.2	253.0	1.3
52989.2	262.6	1.0	103.5	1.5	252.9	1.5
56441.7	261.7	1.3	106.5	2.0	260.4	2.0
59806.9	249.8	1.5	100.6	2.4	261.6	2.5
63071.3	233.8	1.5	90.5	2.7	272.1	3.0
66756.8	219.3	1.4	97.5	3.2	298.4	2.4
70843.6	209.7	1.5	55.7	2.8	258.7	5.9
74771.2	208.6	1.4	75.6	3.8	228.5	3.4
78569.8	216.2	1.4	70.3	3.3	289.3	4.1
82215.2	215.1	2.1	26.5	3.8	270.1	16.2
86481.8	215.0	1.8	98.0	5.3	28.0	2.6
90163.5	262.7	42.0	94.1	161.7	322.2	104.2
92493.1	212.3	37.9	224.9	225.3	44.1	35.0

WIND COMPONENTS M/SEC

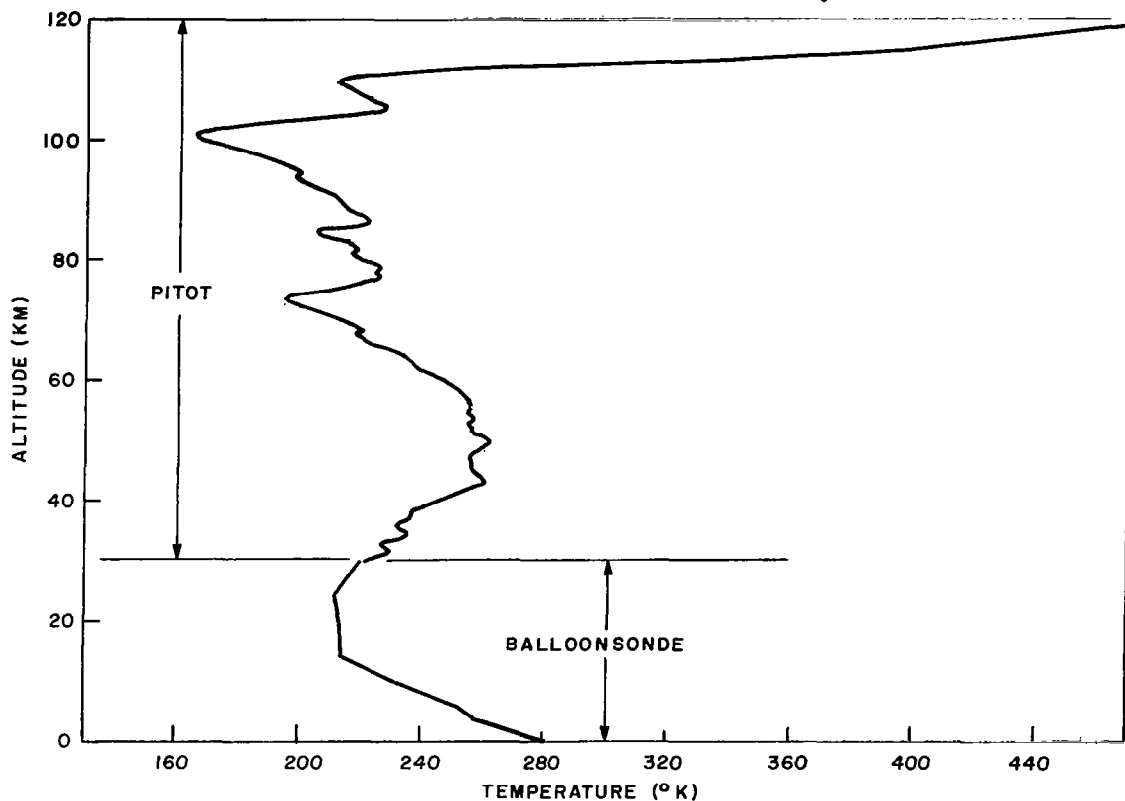


ALTITUDE M MSL	SOUTH COMPONENT	WEST COMPONENT
37000	-0.7	46.9
39000	-2.7	57.3
41000	-4.3	67.6
43000	0.5	75.7
45000	8.0	83.1
47000	16.4	87.5
49000	25.3	90.0
51000	28.8	94.1
53000	29.3	98.8
55000	23.0	102.5
57000	17.3	103.9
59000	15.2	100.8
61000	8.0	96.2
63000	-3.4	91.3
65000	-17.7	91.5
67000	-25.8	88.9
69000	-7.9	71.7
71000	12.3	56.5
73000	32.3	55.7
75000	41.2	57.5
77000	7.0	62.3
79000	-18.4	60.5
81000	-7.8	39.8
83000	-16.2	13.1
85000	-56.4	-20.8
87000	-83.4	-28.8
89000	-78.2	24.8
91000	-105.9	-20.0

ALTITUDE M MSL	TEMPERATURE DEG K	PRESSURE NT/SQ M	DEVIATION PER CENT	DENSITY KG/CU M	DEVIATION PER CENT
36000	238.2	0.467E 03	-6.2	0.683E-02	-5.8
37000	242.1	0.405E 03	-6.4	0.583E-02	-6.4
38000	245.9	0.351E 03	-6.8	0.497E-02	-7.2
39000	249.8	0.305E 03	-7.2	0.425E-02	-8.0
40000	253.7	0.267E 03	-6.7	0.367E-02	-7.9
41000	257.6	0.235E 03	-6.3	0.318E-02	-7.9
42000	260.8	0.206E 03	-6.1	0.275E-02	-7.8
43000	263.4	0.181E 03	-6.0	0.239E-02	-7.7
44000	266.0	0.159E 03	-5.9	0.208E-02	-7.6
45000	268.6	0.140E 03	-5.6	0.182E-02	-7.1
46000	270.8	0.124E 03	-5.3	0.159E-02	-6.7
47000	270.7	0.109E 03	-5.2	0.141E-02	-5.6
48000	270.7	0.969E 02	-5.2	0.124E-02	-5.2
49000	270.6	0.856E 02	-5.2	0.110E-02	-5.2
50000	269.4	0.756E 02	-5.2	0.977E-03	-4.7
51000	267.1	0.667E 02	-5.1	0.871E-03	-3.9
52000	264.9	0.588E 02	-5.4	0.773E-03	-3.4
53000	262.6	0.517E 02	-5.7	0.686E-03	-3.3
54000	262.4	0.455E 02	-6.0	0.604E-03	-4.2
55000	262.1	0.400E 02	-6.2	0.532E-03	-4.9
56000	261.9	0.352E 02	-6.3	0.469E-03	-5.7
57000	259.8	0.310E 02	-6.3	0.416E-03	-5.6
58000	256.2	0.273E 02	-6.3	0.371E-03	-5.0
59000	252.6	0.238E 02	-6.6	0.329E-03	-4.7
60000	248.8	0.208E 02	-6.9	0.292E-03	-4.3
61000	243.9	0.182E 02	-7.1	0.260E-03	-3.4
62000	239.0	0.159E 02	-7.7	0.231E-03	-3.1
63000	234.1	0.137E 02	-8.5	0.205E-03	-3.5
64000	230.1	0.119E 02	-9.1	0.180E-03	-4.0
65000	226.2	0.103E 02	-9.8	0.158E-03	-4.6
66000	222.3	0.886E 01	-10.8	0.138E-03	-5.6
67000	218.8	0.760E 01	-11.6	0.121E-03	-6.5
68000	216.4	0.653E 01	-12.2	0.105E-03	-7.7
69000	214.0	0.560E 01	-12.6	0.912E-04	-8.7
70000	211.7	0.478E 01	-13.4	0.786E-04	-10.1
71000	209.6	0.407E 01	-13.9	0.677E-04	-11.3
72000	209.3	0.347E 01	-14.1	0.578E-04	-13.1
73000	209.1	0.296E 01	-14.1	0.493E-04	-14.6
74000	208.8	0.252E 01	-13.9	0.421E-04	-15.9
75000	209.0	0.215E 01	-13.5	0.358E-04	-17.2
76000	211.0	0.183E 01	-12.7	0.302E-04	-18.9
77000	213.1	0.156E 01	-11.5	0.256E-04	-20.1
78000	215.1	0.134E 01	-9.6	0.217E-04	-20.8
79000	216.1	0.115E 01	-7.3	0.185E-04	-20.9
80000	215.8	0.987E 00	-4.7	0.159E-04	-20.2
81000	215.5	0.846E 00	-1.8	0.136E-04	-17.6
82000	215.2	0.725E 00	1.1	0.117E-04	-15.0
83000	215.1	0.621E 00	4.2	0.100E-04	-12.5
84000	215.1	0.532E 00	7.3	0.862E-05	-9.8
85000	215.1	0.456E 00	10.5	0.738E-05	-7.1
86000	215.0	0.390E 00	13.9	0.633E-05	-4.3
87000	221.7	0.334E 00	17.3	0.526E-05	-4.4
88000	234.7	0.286E 00	20.8	0.425E-05	-7.0
89000	247.7	0.246E 00	24.5	0.346E-05	-9.1
90000	260.6	0.216E 00	31.9	0.289E-05	-8.5
91000	244.6	0.191E 00	39.5	0.272E-05	4.7
92000	223.0	0.165E 00	44.3	0.258E-05	20.8

FIGURE 26

WALLOPS, 19 NOVEMBER 1968, 2005 GMT.



ALTITUDE M MSL	TEMPERATURE DEG K	PRESSURE NT/SQ M	DEVIATION PER CENT	DENSITY KG/CU M	DEVIATION PER CENT
30000	222.1	0.112E 04	-6.2	0.176E-01	-4.3
31000	225.5	0.965E 03	-6.3	0.149E-01	-5.6
32000	229.7	0.830E 03	-6.5	0.126E-01	-7.0
33000	227.2	0.717E 03	-6.5	0.110E-01	-4.9
34000	234.8	0.619E 03	-6.5	0.920E-02	-6.9
35000	235.5	0.537E 03	-6.4	0.795E-02	-6.0
36000	232.8	0.465E 03	-6.6	0.696E-02	-4.1
37000	237.8	0.402E 03	-7.0	0.590E-02	-5.3
38000	237.7	0.349E 03	-7.3	0.512E-02	-4.6
39000	243.1	0.303E 03	-7.5	0.435E-02	-5.9
40000	247.2	0.265E 03	-7.5	0.373E-02	-6.6
41000	252.4	0.230E 03	-8.1	0.319E-02	-7.6
42000	257.7	0.202E 03	-7.8	0.274E-02	-8.5
43000	261.7	0.178E 03	-7.4	0.237E-02	-8.8
44000	259.7	0.155E 03	-7.9	0.210E-02	-7.0
45000	257.4	0.137E 03	-7.8	0.186E-02	-5.3
46000	257.7	0.120E 03	-8.1	0.163E-02	-4.9
47000	255.9	0.105E 03	-8.6	0.144E-02	-3.8
48000	256.4	0.927E 02	-9.2	0.126E-02	-4.3
49000	260.2	0.814E 02	-9.8	0.109E-02	-6.2
50000	262.4	0.715E 02	-10.2	0.951E-03	-7.4
51000	257.6	0.629E 02	-10.6	0.851E-03	-6.1
52000	255.7	0.551E 02	-11.3	0.752E-03	-6.1
53000	253.8	0.483E 02	-11.9	0.664E-03	-6.5
54000	256.6	0.423E 02	-12.5	0.579E-03	-8.2
55000	254.5	0.371E 02	-12.9	0.509E-03	-9.2

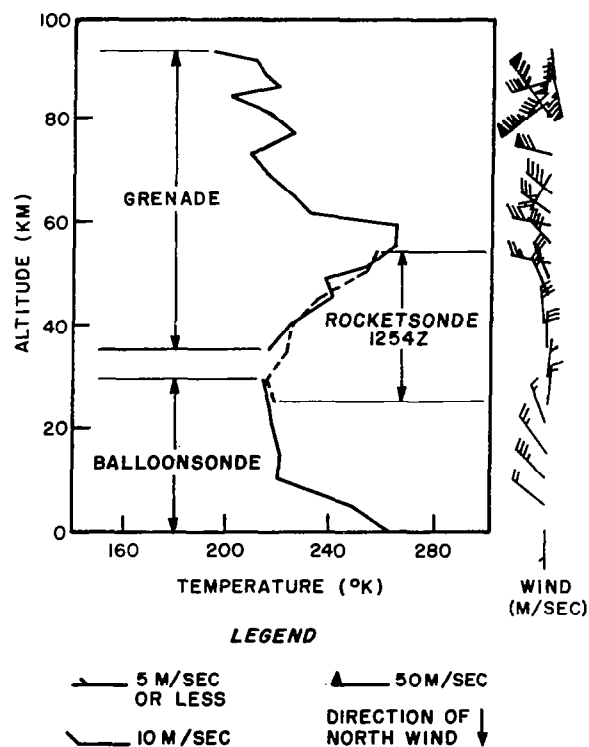
ALTITUDE M MSL	TEMPERATURE DEG K	PRESSURE NT/SQ M	DEVIATION PER CENT	DENSITY KG/CU M	DEVIATION PER CENT
56000	256.5	0.326E 02	-13.2	0.443E-03	-10.9
57000	255.5	0.286E 02	-13.5	0.390E-03	-11.6
58000	253.1	0.250E 02	-13.9	0.345E-03	-11.7
59000	251.4	0.219E 02	-14.0	0.304E-03	-12.1
60000	247.5	0.191E 02	-14.5	0.270E-03	-11.7
61000	243.0	0.167E 02	-14.6	0.240E-03	-11.2
62000	238.1	0.145E 02	-15.7	0.213E-03	-10.9
63000	236.8	0.126E 02	-16.0	0.186E-03	-12.4
64000	234.5	0.109E 02	-16.5	0.163E-03	-13.4
65000	231.5	0.950E 01	-16.9	0.143E-03	-14.2
66000	225.1	0.821E 01	-17.3	0.127E-03	-13.6
67000	221.7	0.706E 01	-17.9	0.111E-03	-14.3
68000	217.7	0.606E 01	-18.5	0.970E-04	-14.9
69000	220.3	0.521E 01	-18.7	0.823E-04	-17.7
70000	214.9	0.446E 01	-19.0	0.724E-04	-17.2
71000	210.4	0.381E 01	-19.4	0.632E-04	-17.3
72000	204.4	0.325E 01	-19.6	0.554E-04	-16.8
73000	196.8	0.274E 01	-20.4	0.487E-04	-15.8
74000	192.1	0.231E 01	-21.0	0.420E-04	-16.2
75000	206.7	0.195E 01	-21.2	0.330E-04	-23.8
76000	217.0	0.167E 01	-20.1	0.269E-04	-27.9
77000	222.9	0.143E 01	-18.7	0.225E-04	-29.9
78000	222.5	0.123E 01	-16.6	0.194E-04	-29.4
79000	222.8	0.106E 01	-14.1	0.167E-04	-28.9
80000	217.5	0.918E 00	-11.4	0.147E-04	-26.4
81000	214.1	0.786E 00	-8.7	0.128E-04	-22.9
82000	215.2	0.673E 00	-6.0	0.109E-04	-21.1
83000	212.8	0.577E 00	-3.1	0.944E-05	-17.9
84000	203.9	0.491E 00	-0.7	0.840E-05	-12.1
85000	201.7	0.417E 00	1.1	0.720E-05	-9.4
86000	219.6	0.355E 00	3.7	0.564E-05	-14.7
87000	220.5	0.305E 00	6.9	0.483E-05	-12.2
88000	219.0	0.262E 00	10.5	0.418E-05	-8.7
89000	214.0	0.225E 00	14.0	0.367E-05	-3.6
90000	211.1	0.193E 00	17.5	0.318E-05	0.3
91000	206.8	0.163E 00	19.6	0.277E-05	6.6
92000	206.6	0.139E 00	22.2	0.236E-05	10.4
93000	200.3	0.119E 00	24.0	0.207E-05	17.4
94000	198.2	0.100E 00	24.9	0.177E-05	21.3
95000	203.9	0.854E-01	25.6	0.146E-05	20.5
96000	204.1	0.726E-01	26.4	0.124E-05	23.0
97000	198.9	0.617E-01	26.7	0.108E-05	28.3
98000	193.0	0.521E-01	25.9	0.940E-06	33.4
99000	185.7	0.437E-01	24.0	0.820E-06	38.7
100000	177.5	0.363E-01	21.0	0.715E-06	43.7
101000	170.5	0.301E-01	17.0	0.615E-06	47.8
102000	172.8	0.247E-01	12.1	0.500E-06	43.1
103000	187.0	0.206E-01	8.3	0.384E-06	30.3
104000	212.7	0.174E-01	5.8	0.286E-06	14.7
105000	226.9	0.150E-01	5.2	0.231E-06	9.1
106000	227.8	0.130E-01	4.5	0.199E-06	10.3
107000	223.8	0.112E-01	3.4	0.175E-06	13.4
108000	219.0	0.967E-02	1.6	0.154E-06	16.4
109000	216.2	0.831E-02	-0.4	0.134E-06	17.6
110000	212.3	0.713E-02	-3.0	0.117E-06	19.0
111000	218.6	0.611E-02	-5.7	0.974E-07	16.5
112000	253.2	0.530E-02	-7.9	0.730E-07	2.0
113000	303.9	0.470E-02	-8.3	0.540E-07	-12.2
114000	354.3	0.426E-02	-7.0	0.419E-07	-21.2
115000	397.8	0.390E-02	-5.2	0.342E-07	-26.0
116000	427.2	0.361E-02	-2.7	0.294E-07	-27.1
117000	446.2	0.334E-02	-0.2	0.251E-07	-26.1
118000	464.9	0.310E-02	2.0	0.233E-07	-25.1
119000	478.8	0.290E-02	5.0	0.211E-07	-23.2
120000	489.1	0.270E-02	7.3	0.193E-07	-20.7
122000	510.7	0.237E-02	0.2	0.162E-07	0.0

FIGURE 27

CHURCHILL, 20 NOVEMBER 1968, 1124 GMT.

ALTITUDE M MSL	TEMPERATURE DEG K	ERROR DEG K	WIND SPEED M/SEC	ERROR M/SEC	WIND DIRECTION DEGREES	ERROR DEG
35133.7	218.6	0.5	28.2	2.0	0.6	3.9
40869.9	225.1	0.8	31.9	3.6	354.5	6.4
45184.1	240.6	1.2	27.7	5.9	337.4	12.3
48775.3	238.1	0.8	28.2	4.8	333.4	9.8
52279.8	253.9	0.7	23.8	4.7	285.7	11.5
55690.4	265.5	1.0	42.1	6.0	313.6	8.3
59005.4	265.4	0.6	29.0	4.1	282.5	8.1
62240.0	232.6	1.0	29.0	7.1	306.4	14.2
65889.3	225.3	1.0	41.0	7.5	313.7	10.5
69921.9	213.0	1.2	24.8	9.2	209.1	21.1
73797.9	209.7	1.8	68.7	12.7	284.1	10.3
77529.5	226.0	1.7	77.2	10.6	334.6	7.8
81102.0	216.2	0.5	85.5	3.1	240.4	2.0
84093.6	201.6	1.4	38.7	8.5	219.4	12.4
86566.2	218.7	3.3	42.2	18.0	254.3	24.0
88938.8	213.0	4.5	95.7	24.2	168.8	14.9
91201.1	209.7	4.0	55.4	22.9	184.8	23.8
93323.9	193.8	3.6	72.2	22.5	178.2	18.0

WIND COMPONENTS M/SEC



ALTITUDE M MSL	SOUTH COMPONENT	WEST COMPONENT
37000	-29.4	0.7
39000	-30.6	1.9
41000	-31.2	3.4
43000	-28.7	6.7
45000	-26.0	10.0
47000	-25.4	11.6
49000	-23.2	13.6
51000	-13.3	19.1
53000	-11.4	24.5
55000	-24.1	28.9
57000	-20.0	29.6
59000	-8.8	28.1
61000	-13.0	25.2
63000	-19.6	24.7
65000	-25.6	28.1
67000	-14.5	24.8
69000	10.2	16.1
71000	10.9	27.2
73000	-8.8	55.2
75000	-33.8	55.8
77000	-59.7	39.0
79000	-23.7	50.1
81000	31.8	67.5
83000	34.4	42.8
85000	23.1	30.5
87000	29.8	27.3
89000	81.4	-10.0
91000	62.6	0.4

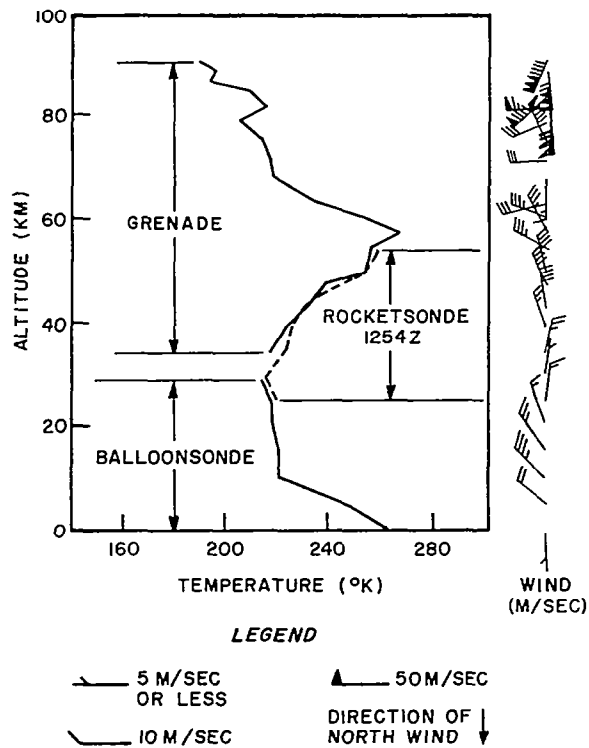
ALTITUDE M MSL	TEMPERATURE DEG K	PRESSURE NT/SQ M	DEVIATION PER CENT	DENSITY KG/CU M	DEVIATION PER CENT
36000	219.6	0.465E 03	-6.5	0.738E-02	1.8
37000	220.7	0.399E 03	-7.8	0.629E-02	0.9
38000	221.8	0.341E 03	-9.3	0.536E-02	-0.0
39000	223.0	0.293E 03	-10.6	0.458E-02	-0.8
40000	224.1	0.252E 03	-11.9	0.392E-02	-1.6
41000	225.6	0.217E 03	-13.3	0.336E-02	-2.7
42000	229.2	0.187E 03	-14.8	0.284E-02	-4.9
43000	232.8	0.161E 03	-16.4	0.241E-02	-7.2
44000	236.4	0.139E 03	-17.6	0.205E-02	-8.8
45000	240.0	0.121E 03	-18.5	0.176E-02	-10.3
46000	240.1	0.105E 03	-19.6	0.153E-02	-10.6
47000	239.4	0.917E 02	-20.8	0.133E-02	-10.8
48000	238.7	0.796E 02	-22.1	0.116E-02	-11.7
49000	239.1	0.691E 02	-23.4	0.100E-02	-13.4
50000	243.6	0.600E 02	-24.7	0.857E-03	-16.4
51000	248.1	0.523E 02	-25.7	0.734E-03	-19.0
52000	252.6	0.458E 02	-26.3	0.631E-03	-21.1
53000	256.4	0.401E 02	-26.9	0.545E-03	-23.2
54000	259.8	0.351E 02	-27.4	0.471E-03	-25.3
55000	263.2	0.309E 02	-27.5	0.409E-03	-26.8
56000	265.5	0.272E 02	-27.5	0.358E-03	-28.0
57000	265.5	0.240E 02	-27.4	0.315E-03	-28.4
58000	265.4	0.211E 02	-27.2	0.278E-03	-28.8
59000	265.4	0.186E 02	-27.0	0.245E-03	-29.1
60000	255.3	0.164E 02	-26.6	0.224E-03	-26.5
61000	245.1	0.144E 02	-26.8	0.204E-03	-24.2
62000	235.0	0.124E 02	-27.6	0.184E-03	-22.7
63000	231.1	0.108E 02	-28.3	0.162E-03	-23.3
64000	229.1	0.934E 01	-28.9	0.142E-03	-24.5
65000	227.1	0.805E 01	-29.6	0.123E-03	-25.9
66000	225.0	0.694E 01	-30.1	0.107E-03	-26.9
67000	221.9	0.598E 01	-30.5	0.939E-04	-27.5
68000	218.9	0.515E 01	-30.7	0.820E-04	-28.0
69000	215.8	0.440E 01	-31.3	0.710E-04	-28.9
70000	213.0	0.376E 01	-31.7	0.615E-04	-29.6
71000	212.1	0.321E 01	-32.0	0.528E-04	-30.8
72000	211.3	0.274E 01	-32.1	0.453E-04	-31.9
73000	210.4	0.234E 01	-32.1	0.388E-04	-32.9
74000	210.6	0.199E 01	-31.9	0.330E-04	-34.0
75000	215.0	0.170E 01	-31.5	0.276E-04	-36.2
76000	219.4	0.145E 01	-30.6	0.231E-04	-37.9
77000	223.7	0.125E 01	-28.9	0.196E-04	-38.9
78000	224.7	0.108E 01	-26.9	0.168E-04	-38.7
79000	222.0	0.937E 00	-24.6	0.147E-04	-37.3
80000	219.3	0.805E 00	-22.3	0.127E-04	-36.0
81000	216.5	0.690E 00	-19.9	0.111E-04	-33.1
82000	211.8	0.591E 00	-17.4	0.973E-05	-29.5
83000	206.9	0.506E 00	-15.0	0.852E-05	-25.8
84000	202.0	0.429E 00	-13.4	0.739E-05	-22.6
85000	207.8	0.363E 00	-11.8	0.609E-05	-23.3
86000	214.8	0.311E 00	-9.3	0.504E-05	-23.7
87000	217.6	0.267E 00	-6.3	0.427E-05	-22.3
88000	215.2	0.229E 00	-3.4	0.371E-05	-18.9
89000	212.9	0.196E 00	-0.7	0.320E-05	-15.7
90000	211.5	0.167E 00	2.0	0.276E-05	-12.8
91000	210.0	0.143E 00	4.5	0.237E-05	-8.5
92000	203.7	0.122E 00	6.8	0.209E-05	-2.1
93000	196.2	0.103E 00	7.7	0.183E-05	4.1

FIGURE 28

CHURCHILL, 20 NOVEMBER 1968, 1324 GMT.

ALTITUDE M MSL	TEMPERATURE DEG K	ERROR DEG K	WIND SPEED M/SEC	ERROR M/SEC	WIND DIRECTION DEGREES	ERROR DEG
34067.2	217.9	0.2	24.9	0.6	10.8	1.4
39622.2	223.8	0.2	24.4	0.7	339.6	1.6
43816.4	230.9	0.3	41.3	1.1	355.6	1.5
47303.0	236.8	0.8	38.2	3.4	335.4	5.2
50693.5	253.1	0.9	40.1	3.8	347.4	5.5
54009.0	256.0	0.5	32.9	2.5	302.0	4.6
57257.5	265.9	0.4	36.5	2.2	330.3	3.5
60404.4	250.9	0.3	33.9	2.2	289.0	3.7
63923.9	233.0	1.2	27.8	7.5	258.9	15.4
67807.6	218.6	1.5	12.7	10.5	181.2	46.6
71530.6	217.7	1.1	29.6	8.0	266.8	15.5
75128.9	212.6	1.2	89.9	9.7	339.4	6.2
78583.2	205.5	1.8	29.0	14.5	247.0	28.2
81460.2	215.2	3.6	63.2	27.5	267.5	24.5
83805.6	207.7	5.1	88.9	38.8	225.5	24.0
86064.9	192.6	3.8	120.6	30.0	181.8	14.0
88244.3	194.5	3.3	167.3	25.3	175.6	8.4
90271.4	187.9	6.3	189.0	48.2	201.8	13.6

WIND COMPONENTS M/SEC



ALTITUDE M MSL	SOUTH COMPONENT	WEST COMPONENT
36000	-23.9	-0.0
38000	-23.3	4.6
40000	-25.0	7.6
42000	-33.3	5.4
44000	-39.8	4.6
46000	-37.2	11.1
48000	-35.7	14.2
50000	-38.1	10.3
52000	-30.6	16.3
54000	-20.2	25.7
56000	-26.2	21.8
58000	-26.6	21.5
60000	-13.9	29.7
62000	-3.6	29.9
64000	4.8	25.6
66000	9.2	12.8
68000	11.3	4.2
70000	6.1	17.5
72000	-11.0	29.3
74000	-57.3	30.9
76000	-59.9	30.3
78000	-6.1	28.1
80000	7.0	44.7
82000	17.9	62.6
84000	67.3	54.0
86000	117.9	9.6
88000	159.2	-3.8

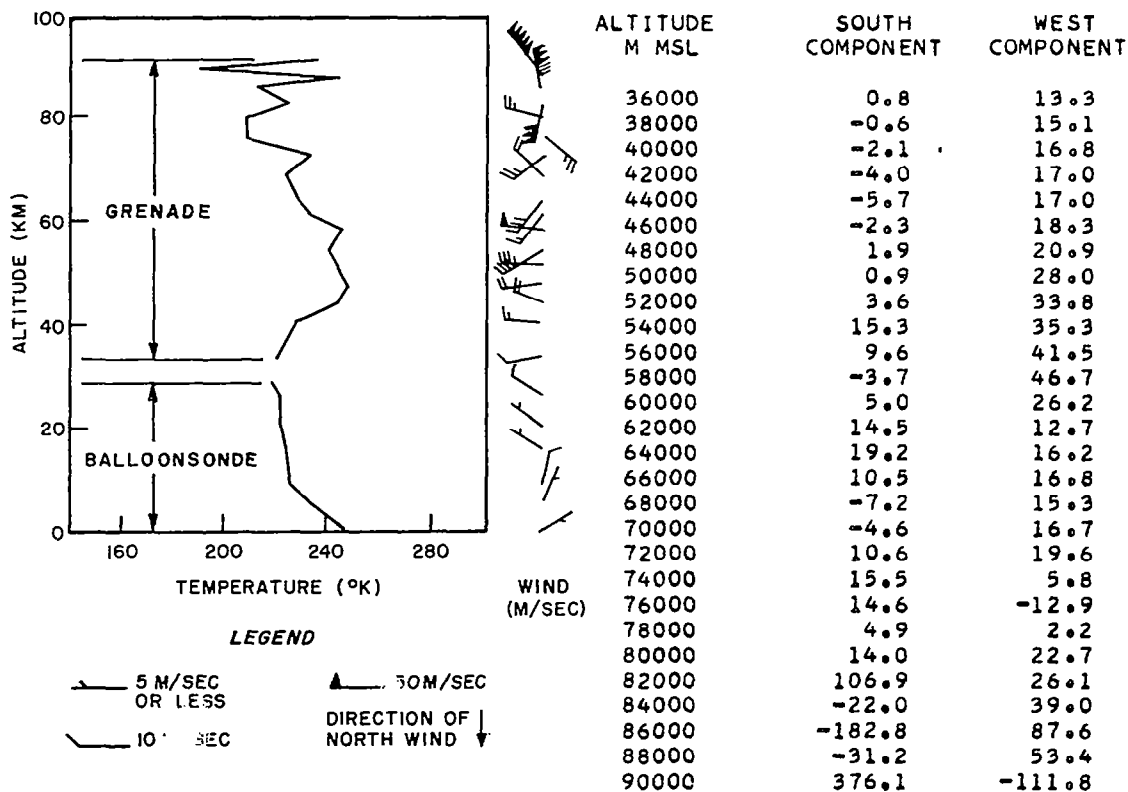
ALTITUDE M MSL	TEMPERATURE DEG K	PRESSURE NT/SQ M	DEVIATION PER CENT	DENSITY KG/CU M	DEVIATION PER CENT
35000	218.9	0.539E 03	-6.1	0.858E-02	1.4
36000	219.9	0.461E 03	-7.3	0.731E-02	0.7
37000	221.0	0.395E 03	-8.7	0.623E-02	-0.0
38000	222.0	0.339E 03	-9.9	0.532E-02	-0.7
39000	223.1	0.292E 03	-11.1	0.456E-02	-1.4
40000	224.4	0.251E 03	-12.5	0.389E-02	-2.4
41000	226.1	0.216E 03	-13.9	0.332E-02	-3.7
42000	227.8	0.185E 03	-15.5	0.283E-02	-5.1
43000	229.5	0.160E 03	-16.8	0.243E-02	-6.2
44000	231.2	0.138E 03	-18.1	0.208E-02	-7.5
45000	232.9	0.119E 03	-19.6	0.179E-02	-8.8
46000	234.6	0.103E 03	-21.0	0.153E-02	-10.1
47000	236.3	0.899E 02	-22.3	0.132E-02	-11.4
48000	240.2	0.780E 02	-23.7	0.113E-02	-14.1
49000	245.0	0.676E 02	-25.0	0.962E-03	-17.2
50000	249.8	0.592E 02	-25.7	0.826E-03	-19.5
51000	253.3	0.518E 02	-26.3	0.713E-03	-21.3
52000	254.2	0.454E 02	-27.0	0.622E-03	-22.3
53000	255.1	0.398E 02	-27.5	0.543E-03	-23.4
54000	256.0	0.349E 02	-28.0	0.474E-03	-24.7
55000	259.0	0.306E 02	-28.4	0.411E-03	-26.6
56000	262.1	0.268E 02	-28.5	0.357E-03	-28.1
57000	265.1	0.236E 02	-28.4	0.311E-03	-29.4
58000	262.4	0.208E 02	-28.3	0.277E-03	-29.0
59000	257.6	0.183E 02	-28.1	0.248E-03	-28.1
60000	252.8	0.160E 02	-28.3	0.221E-03	-27.5
61000	247.9	0.140E 02	-28.4	0.197E-03	-26.7
62000	242.8	0.123E 02	-28.6	0.176E-03	-26.2
63000	237.7	0.106E 02	-29.3	0.156E-03	-26.5
64000	232.8	0.922E 01	-29.8	0.138E-03	-26.6
65000	229.0	0.799E 01	-30.1	0.121E-03	-27.0
66000	225.3	0.691E 01	-30.4	0.106E-03	-27.3
67000	221.6	0.593E 01	-31.0	0.932E-04	-28.0
68000	218.6	0.509E 01	-31.5	0.811E-04	-28.8
69000	218.3	0.437E 01	-31.9	0.697E-04	-30.2
70000	218.1	0.374E 01	-32.0	0.598E-04	-31.5
71000	217.8	0.321E 01	-32.0	0.514E-04	-32.7
72000	217.0	0.275E 01	-31.9	0.442E-04	-33.5
73000	215.6	0.236E 01	-31.5	0.382E-04	-33.9
74000	214.2	0.202E 01	-31.1	0.329E-04	-34.3
75000	212.8	0.172E 01	-30.5	0.283E-04	-34.6
76000	210.8	0.147E 01	-29.7	0.244E-04	-34.6
77000	208.8	0.126E 01	-28.7	0.210E-04	-34.3
78000	206.7	0.107E 01	-27.8	0.180E-04	-34.2
79000	206.9	0.912E 00	-26.6	0.153E-04	-34.5
80000	210.3	0.776E 00	-25.1	0.128E-04	-35.7
81000	213.7	0.663E 00	-23.0	0.108E-04	-34.9
82000	213.5	0.568E 00	-20.6	0.927E-05	-32.8
83000	210.3	0.485E 00	-18.4	0.805E-05	-29.9
84000	206.4	0.414E 00	-16.4	0.698E-05	-26.9
85000	199.7	0.352E 00	-14.5	0.614E-05	-22.7
86000	193.0	0.296E 00	-13.5	0.535E-05	-19.1
87000	193.4	0.249E 00	-12.5	0.449E-05	-18.3
88000	194.3	0.210E 00	-11.4	0.376E-05	-17.7
89000	192.0	0.177E 00	-10.3	0.321E-05	-15.6
90000	188.8	0.148E 00	-9.5	0.274E-05	-13.4

FIGURE 29

BARROW, 22 NOVEMBER 1968, 0031 GMT.

ALTITUDE M MSL	TEMPERATURE DEG K	ERROR DEG K	WIND SPEED M/SEC	ERROR M/SEC	WIND DIRECTION DEGREES	ERROR DEG
34481.4	220.2	0.2	12.0	0.7	260.6	5.9
40146.3	228.1	0.3	17.3	1.5	277.4	6.9
44407.7	244.6	0.8	18.2	3.8	290.9	12.0
47947.7	248.5	0.9	20.2	2.8	262.2	13.8
51397.3	244.2	1.0	33.5	3.5	270.5	8.9
54761.1	241.6	1.6	41.0	4.7	240.6	12.5
58024.1	245.9	1.7	51.5	6.2	278.2	8.8
61213.0	233.4	2.4	16.9	8.0	221.0	41.0
64808.0	229.7	2.4	27.6	8.2	219.9	25.0
68770.9	223.2	1.7	20.5	9.3	314.3	16.3
72583.6	234.4	2.0	26.3	8.2	233.5	25.8
76279.8	209.5	3.7	24.4	20.3	129.1	36.7
79804.1	209.8	4.5	25.2	17.7	283.6	45.3
82718.7	225.1	24.2	151.1	112.1	190.0	33.9
85125.1	213.7	23.0	179.2	131.4	343.7	21.3
87447.7	245.6	76.1	251.3	229.2	323.4	42.3
89686.0	191.9	65.0	473.8	280.8	155.0	24.2
91783.1	236.9	111.3	358.3	454.6	202.6	69.6

WIND COMPONENTS M/SEC



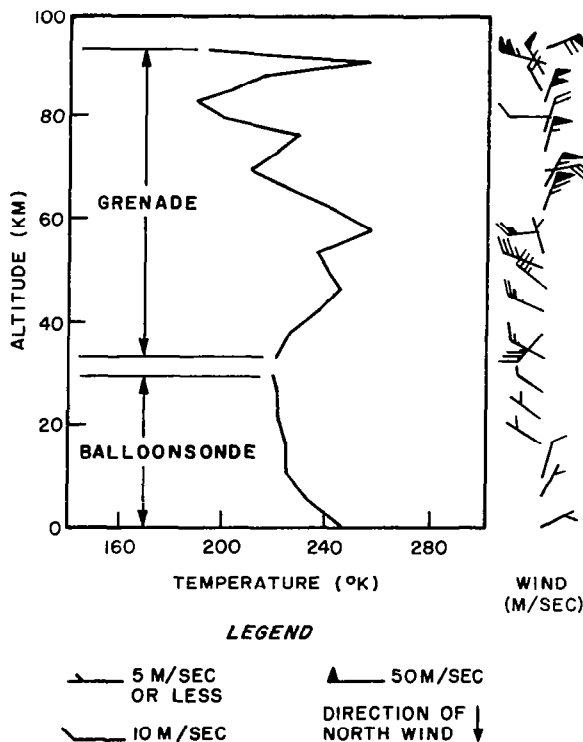
ALTITUDE M MSL	TEMPERATURE DEG K	PRESSURE NT/SQ M	DEVIATION PER CENT	DENSITY KG/CU M	DEVIATION PER CENT
35000	221.0	0.533E 03	-7.0	0.841E-02	-0.5
36000	222.4	0.457E 03	-8.1	0.717E-02	-1.1
37000	223.7	0.392E 03	-9.3	0.611E-02	-1.9
38000	225.1	0.337E 03	-10.5	0.521E-02	-2.7
39000	226.5	0.290E 03	-11.5	0.447E-02	-3.3
40000	227.9	0.250E 03	-12.6	0.383E-02	-4.0
41000	231.4	0.216E 03	-13.8	0.325E-02	-5.8
42000	235.3	0.186E 03	-15.2	0.276E-02	-7.8
43000	239.2	0.161E 03	-16.3	0.235E-02	-9.5
44000	243.0	0.140E 03	-17.0	0.201E-02	-10.7
45000	245.3	0.122E 03	-17.8	0.174E-02	-11.4
46000	246.3	0.106E 03	-18.7	0.150E-02	-11.9
47000	247.4	0.931E 02	-19.6	0.131E-02	-12.4
48000	248.4	0.813E 02	-20.4	0.114E-02	-13.4
49000	247.2	0.710E 02	-21.3	0.100E-02	-13.9
50000	245.9	0.619E 02	-22.3	0.877E-03	-14.5
51000	244.7	0.539E 02	-23.3	0.768E-03	-15.2
52000	243.8	0.470E 02	-24.4	0.671E-03	-16.1
53000	243.0	0.409E 02	-25.4	0.587E-03	-17.3
54000	242.2	0.356E 02	-26.4	0.512E-03	-18.8
55000	241.9	0.310E 02	-27.4	0.446E-03	-20.3
56000	243.2	0.269E 02	-28.3	0.386E-03	-22.3
57000	244.5	0.235E 02	-29.0	0.334E-03	-24.0
58000	245.8	0.205E 02	-29.6	0.290E-03	-25.6
59000	242.1	0.178E 02	-30.0	0.257E-03	-25.5
60000	238.2	0.155E 02	-30.7	0.227E-03	-25.5
61000	234.3	0.134E 02	-31.5	0.200E-03	-25.8
62000	232.6	0.116E 02	-32.3	0.174E-03	-26.9
63000	231.6	0.101E 02	-32.9	0.152E-03	-28.4
64000	230.5	0.873E 01	-33.5	0.131E-03	-29.9
65000	229.3	0.754E 01	-34.0	0.114E-03	-31.2
66000	227.7	0.652E 01	-34.4	0.997E-04	-32.1
67000	226.1	0.563E 01	-34.6	0.867E-04	-33.0
68000	224.5	0.484E 01	-34.9	0.752E-04	-34.0
69000	223.9	0.417E 01	-35.0	0.648E-04	-35.1
70000	226.8	0.359E 01	-34.9	0.551E-04	-37.0
71000	229.7	0.309E 01	-34.6	0.469E-04	-38.5
72000	232.7	0.268E 01	-33.7	0.401E-04	-39.6
73000	231.6	0.232E 01	-32.6	0.350E-04	-39.5
74000	224.8	0.201E 01	-31.3	0.312E-04	-37.6
75000	218.1	0.173E 01	-30.3	0.276E-04	-36.1
76000	211.4	0.147E 01	-29.7	0.243E-04	-34.8
77000	209.6	0.126E 01	-28.9	0.209E-04	-34.7
78000	209.7	0.107E 01	-27.7	0.178E-04	-35.0
79000	209.8	0.916E 00	-26.3	0.152E-04	-35.2
80000	210.9	0.781E 00	-24.6	0.129E-04	-35.4
81000	216.1	0.666E 00	-22.6	0.107E-04	-35.3
82000	221.3	0.571E 00	-20.2	0.899E-05	-34.8
83000	223.8	0.493E 00	-17.2	0.767E-05	-33.2
84000	219.0	0.425E 00	-14.2	0.675E-05	-29.3
85000	214.3	0.363E 00	-11.8	0.591E-05	-25.6
86000	225.7	0.311E 00	-9.2	0.480E-05	-27.4
87000	239.5	0.270E 00	-5.3	0.392E-05	-28.6
88000	232.4	0.235E 00	-0.7	0.353E-05	-22.8
89000	208.4	0.202E 00	2.5	0.338E-05	-11.0
90000	198.6	0.170E 00	3.6	0.298E-05	-5.7
91000	220.1	0.144E 00	5.3	0.228E-05	-12.0

FIGURE 30

BARROW, 22 NOVEMBER 1968, 0755 GMT.

ALTITUDE M MSL	TEMPERATURE DEG K	ERROR DEG K	WIND SPEED M/SEC	ERROR M/SEC	WIND DIRECTION DEGREES	ERROR DEG
33503.1	220.5	0.5	14.9	3.1	299.3	10.0
37847.7	226.4	0.8	27.6	3.3	222.2	10.2
42038.9	237.0	0.9	24.6	4.6	296.4	9.5
46111.6	245.1	1.3	34.9	7.6	310.7	8.3
50042.9	240.4	1.3	33.3	6.0	291.9	9.9
53884.2	236.1	3.5	6.0	20.1	343.1	97.3
57573.6	257.5	3.1	25.9	9.7	265.0	35.1
61639.5	243.2	2.0	66.3	9.0	18.6	7.4
65537.7	224.6	2.8	56.1	12.0	26.5	13.8
69277.7	210.0	2.8	31.0	9.5	80.1	28.5
72860.6	220.1	3.8	55.5	17.8	15.6	16.6
76336.2	227.8	8.8	18.0	38.9	15.5	117.4
79649.1	200.4	8.3	9.6	33.6	272.1	262.3
82353.2	190.4	8.0	97.9	39.3	19.1	22.2
84923.0	203.2	6.8	18.9	41.4	331.5	62.6
87737.6	216.3	10.7	48.1	59.0	329.1	35.3
90399.9	256.5	30.5	106.5	106.6	286.6	58.3
93146.1	195.4	20.4	72.4	55.4	66.9	91.2

WIND COMPONENTS M/SEC



ALTITUDE M MSL	SOUTH COMPONENT	WEST COMPONENT
35000	2.2	14.9
37000	14.9	17.4
39000	11.8	19.5
41000	-3.1	21.1
43000	-13.7	23.0
45000	-19.5	25.2
47000	-20.4	27.4
49000	-15.2	29.7
51000	-10.8	23.6
53000	-7.3	8.5
55000	-3.3	9.0
57000	0.1	21.2
59000	-20.5	9.3
61000	-51.9	-13.4
63000	-58.4	-22.5
65000	-51.4	-24.6
67000	-32.6	-27.2
69000	-11.9	-29.4
71000	-28.4	-23.0
73000	-47.6	-14.8
75000	-31.2	-8.7
77000	-14.0	-1.8
79000	-4.8	6.1
81000	-46.3	-11.2
83000	-71.4	-20.8
85000	-25.5	7.2
87000	-34.6	21.0
89000	-36.2	61.3
91000	-30.2	61.5

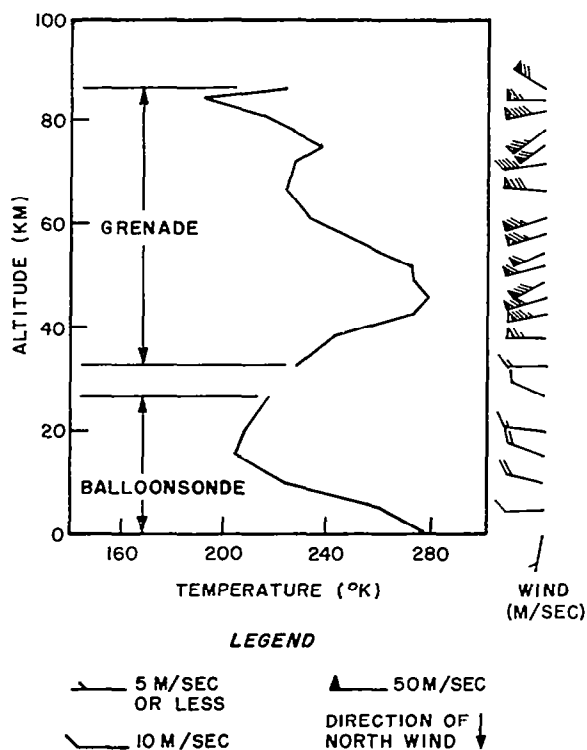
ALTITUDE M MSL	TEMPERATURE DEG K	PRESSURE NT/SQ M	DEVIATION PER CENT	DENSITY KG/CU M	DEVIATION PER CENT
34000	221.2	0.622E 03	-6.2	0.979E-02	-0.9
35000	222.6	0.533E 03	-7.1	0.835E-02	-1.3
36000	223.9	0.457E 03	-8.1	0.711E-02	-1.9
37000	225.3	0.394E 03	-9.0	0.609E-02	-2.2
38000	226.8	0.339E 03	-9.9	0.521E-02	-2.8
39000	229.3	0.292E 03	-11.0	0.444E-02	-4.0
40000	231.9	0.252E 03	-12.0	0.379E-02	-5.1
41000	234.4	0.218E 03	-12.8	0.325E-02	-5.9
42000	236.9	0.189E 03	-13.7	0.278E-02	-6.8
43000	238.9	0.164E 03	-14.7	0.239E-02	-7.6
44000	240.9	0.142E 03	-15.7	0.206E-02	-8.6
45000	242.9	0.124E 03	-16.7	0.177E-02	-9.4
46000	244.9	0.108E 03	-17.6	0.153E-02	-10.2
47000	244.1	0.942E 02	-18.6	0.134E-02	-10.1
48000	242.9	0.821E 02	-19.7	0.117E-02	-10.5
49000	241.6	0.713E 02	-20.9	0.102E-02	-11.5
50000	240.4	0.620E 02	-22.2	0.898E-03	-12.4
51000	239.3	0.539E 02	-23.4	0.784E-03	-13.4
52000	238.2	0.468E 02	-24.6	0.685E-03	-14.4
53000	237.1	0.406E 02	-25.9	0.597E-03	-15.8
54000	236.8	0.352E 02	-27.2	0.518E-03	-17.8
55000	242.6	0.305E 02	-28.4	0.439E-03	-21.6
56000	248.4	0.266E 02	-29.1	0.374E-03	-24.8
57000	254.2	0.234E 02	-29.3	0.320E-03	-27.2
58000	256.0	0.205E 02	-29.4	0.279E-03	-28.4
59000	252.5	0.180E 02	-29.5	0.248E-03	-28.0
60000	248.9	0.157E 02	-29.7	0.220E-03	-27.7
61000	245.4	0.137E 02	-30.1	0.195E-03	-27.7
62000	241.4	0.119E 02	-30.5	0.172E-03	-27.7
63000	236.7	0.104E 02	-30.8	0.153E-03	-27.7
64000	231.9	0.905E 01	-31.1	0.135E-03	-27.8
65000	227.2	0.779E 01	-31.9	0.119E-03	-28.2
66000	222.8	0.671E 01	-32.4	0.104E-03	-28.6
67000	218.9	0.578E 01	-32.8	0.920E-04	-28.9
68000	215.0	0.495E 01	-33.4	0.802E-04	-29.5
69000	211.0	0.422E 01	-34.1	0.697E-04	-30.2
70000	212.0	0.360E 01	-34.7	0.591E-04	-32.4
71000	214.8	0.307E 01	-35.1	0.497E-04	-34.8
72000	217.7	0.263E 01	-34.9	0.421E-04	-36.6
73000	220.4	0.226E 01	-34.4	0.357E-04	-38.1
74000	222.6	0.194E 01	-33.8	0.304E-04	-39.3
75000	224.9	0.167E 01	-32.7	0.259E-04	-40.1
76000	227.1	0.144E 01	-31.3	0.221E-04	-40.6
77000	222.3	0.124E 01	-29.5	0.195E-04	-39.0
78000	214.1	0.107E 01	-27.5	0.175E-04	-36.1
79000	205.8	0.914E 00	-26.5	0.154E-04	-34.1
80000	199.1	0.773E 00	-25.3	0.135E-04	-32.2
81000	195.4	0.655E 00	-23.9	0.116E-04	-29.7
82000	191.7	0.551E 00	-23.1	0.100E-04	-27.5
83000	193.7	0.462E 00	-22.4	0.831E-05	-27.6
84000	198.6	0.390E 00	-21.2	0.684E-05	-28.3
85000	203.6	0.331E 00	-19.6	0.567E-05	-28.7
86000	208.2	0.281E 00	-17.9	0.470E-05	-28.8
87000	212.8	0.240E 00	-15.7	0.393E-05	-28.5
88000	220.2	0.206E 00	-13.2	0.325E-05	-28.8
89000	235.4	0.176E 00	-10.5	0.261E-05	-31.3
90000	250.5	0.154E 00	-5.8	0.215E-05	-32.0
91000	243.2	0.135E 00	-0.7	0.194E-05	-25.0
92000	220.9	0.117E 00	3.0	0.186E-05	-12.9
93000	198.7	0.995E-01	3.7	0.174E-05	-1.0

FIGURE 3I

WALLOPS, 12 DECEMBER 1968, 2108 GMT.

ALTITUDE M MSL	TEMPERATURE DEG K	ERROR DEG K	WIND SPEED M/SEC	ERROR M/SEC	WIND DIRECTION DEGREES	ERROR DEG
32927.7	228.1	0.6	16.8	0.4	271.1	3.3
38290.0	242.2	0.7	64.8	0.7	271.2	1.2
42296.7	273.6	1.0	85.8	1.1	260.3	1.6
45613.2	278.0	1.0	79.9	1.3	254.1	1.8
48844.2	273.9	1.0	78.8	1.6	242.3	1.9
51984.8	271.9	1.1	60.9	1.5	255.5	2.9
55044.7	258.2	1.1	58.6	1.9	246.3	3.3
58001.7	243.4	1.0	72.7	1.8	253.5	2.7
61315.3	231.8	0.7	73.4	1.4	253.3	2.1
66688.4	224.2	0.4	78.6	1.0	275.6	1.2
71858.0	226.0	1.1	42.3	2.0	262.3	5.5
75056.5	236.8	1.2	68.2	2.6	235.7	3.4
77700.5	225.9	1.5	75.2	3.6	233.2	4.3
80904.3	214.7	0.7	90.1	1.6	260.7	2.0
83930.8	191.1	26.9	63.3	66.2	272.3	109.6
85858.7	222.3	39.9	69.3	156.5	303.7	137.5

WIND COMPONENTS M/SEC



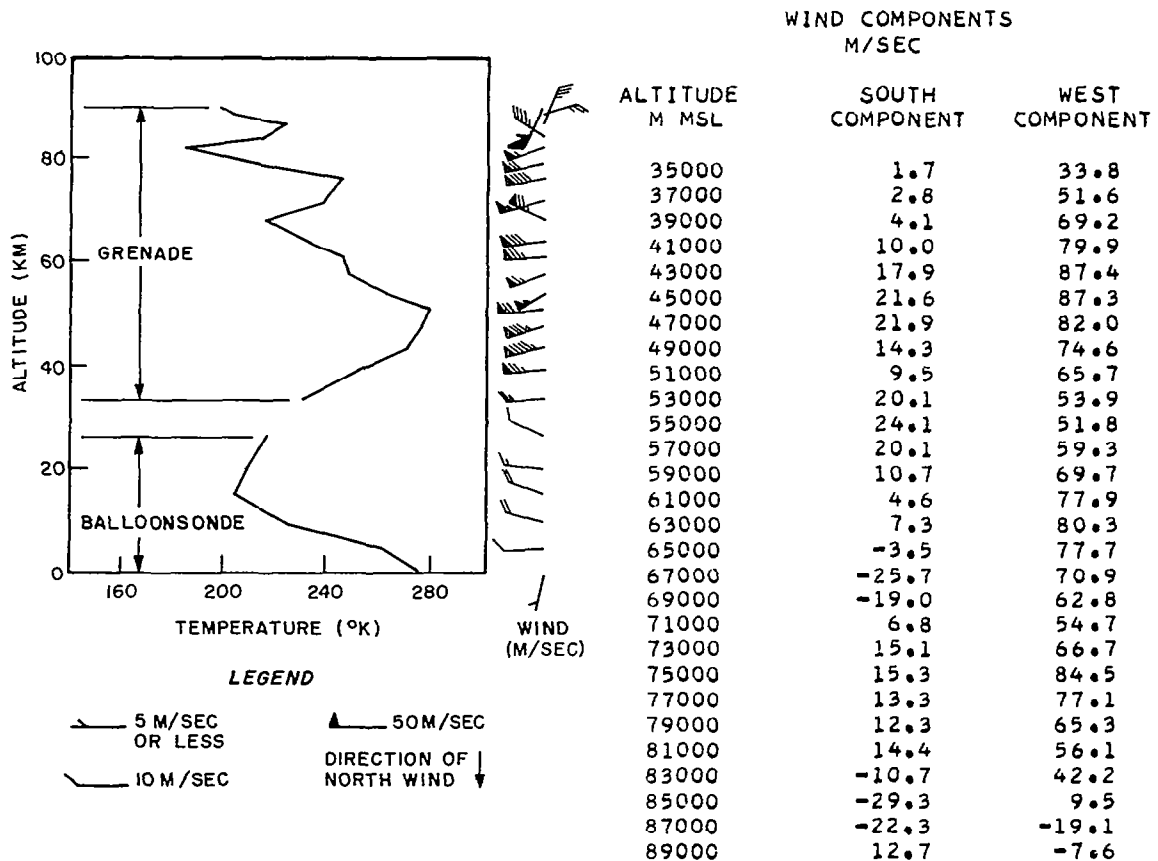
ALTITUDE M MSL	SOUTH COMPONENT	WEST COMPONENT
34000	-0.5	26.4
36000	-0.9	44.3
38000	-0.7	61.7
40000	5.3	73.2
42000	13.0	82.2
44000	18.2	80.6
46000	23.8	76.0
48000	32.6	71.6
50000	28.7	65.8
52000	17.5	59.4
54000	20.6	55.5
56000	22.5	58.9
58000	20.9	68.4
60000	20.8	70.1
62000	17.2	71.4
64000	6.6	74.3
66000	-3.8	77.0
68000	-4.3	69.0
70000	0.8	55.0
72000	8.5	44.7
74000	27.6	51.6
76000	40.7	57.7
78000	40.6	63.8
80000	23.0	80.8
82000	8.4	79.8
84000	-6.1	64.5

ALTITUDE M MSL	TEMPERATURE DEG K	PRESSURE NT/SQ M	DEVIATION PER CENT	DENSITY KG/CU M	DEVIATION PER CENT
33000	228.3	0.722E 03	-5.7	0.110E-01	-4.6
34000	230.9	0.623E 03	-6.0	0.940E-02	-4.8
35000	233.5	0.537E 03	-6.4	0.801E-02	-5.2
36000	236.1	0.463E 03	-6.9	0.684E-02	-5.7
37000	238.8	0.403E 03	-6.8	0.588E-02	-5.6
38000	241.4	0.351E 03	-6.9	0.506E-02	-5.6
39000	247.7	0.305E 03	-7.1	0.429E-02	-7.2
40000	255.6	0.265E 03	-7.4	0.362E-02	-9.3
41000	263.4	0.232E 03	-7.3	0.307E-02	-11.0
42000	271.3	0.205E 03	-6.5	0.264E-02	-11.8
43000	274.5	0.181E 03	-5.7	0.230E-02	-11.2
44000	275.9	0.160E 03	-5.1	0.203E-02	-10.1
45000	277.2	0.142E 03	-4.4	0.178E-02	-8.9
46000	277.5	0.126E 03	-3.8	0.158E-02	-7.5
47000	276.3	0.111E 03	-3.5	0.140E-02	-5.8
48000	275.0	0.989E 02	-3.2	0.125E-02	-4.8
49000	273.8	0.875E 02	-3.1	0.111E-02	-4.2
50000	273.2	0.774E 02	-2.9	0.987E-03	-3.8
51000	272.6	0.684E 02	-2.8	0.874E-03	-3.5
52000	271.9	0.605E 02	-2.7	0.775E-03	-3.2
53000	267.4	0.534E 02	-2.6	0.696E-03	-1.9
54000	262.9	0.471E 02	-2.8	0.624E-03	-1.1
55000	258.4	0.413E 02	-3.1	0.557E-03	-0.5
56000	253.4	0.363E 02	-3.4	0.499E-03	0.3
57000	248.4	0.318E 02	-4.0	0.445E-03	1.0
58000	243.4	0.277E 02	-4.8	0.396E-03	1.4
59000	239.9	0.241E 02	-5.6	0.350E-03	1.3
60000	236.4	0.209E 02	-6.6	0.308E-03	0.9
61000	232.9	0.181E 02	-7.8	0.271E-03	0.3
62000	230.9	0.157E 02	-8.9	0.236E-03	-0.9
63000	229.4	0.135E 02	-9.8	0.206E-03	-2.8
64000	228.0	0.117E 02	-10.8	0.179E-03	-4.9
65000	226.6	0.100E 02	-11.8	0.155E-03	-6.9
66000	225.2	0.869E 01	-12.4	0.134E-03	-8.5
67000	224.3	0.749E 01	-12.9	0.116E-03	-10.2
68000	224.7	0.645E 01	-13.2	0.100E-03	-12.2
69000	225.0	0.556E 01	-13.3	0.861E-04	-13.8
70000	225.4	0.479E 01	-13.1	0.740E-04	-15.3
71000	225.7	0.413E 01	-12.6	0.638E-04	-16.5
72000	226.5	0.356E 01	-11.9	0.548E-04	-17.6
73000	229.9	0.307E 01	-10.9	0.466E-04	-19.4
74000	233.3	0.266E 01	-9.3	0.397E-04	-20.6
75000	236.7	0.231E 01	-7.0	0.340E-04	-21.4
76000	232.9	0.201E 01	-4.4	0.300E-04	-19.5
77000	228.8	0.174E 01	-1.7	0.265E-04	-17.3
78000	224.8	0.150E 01	1.0	0.232E-04	-15.3
79000	221.3	0.129E 01	4.1	0.203E-04	-13.2
80000	217.9	0.110E 01	6.9	0.177E-04	-11.2
81000	214.0	0.949E 00	10.1	0.154E-04	-6.9
82000	206.3	0.813E 00	13.5	0.137E-04	-0.5
83000	198.6	0.696E 00	16.8	0.122E-04	6.2
84000	191.4	0.585E 00	18.0	0.106E-04	11.3
85000	208.0	0.492E 00	19.4	0.824E-05	3.6

FIGURE 32

WALLOPS, 12 DECEMBER 1968, 2308 GMT.

ALTITUDE M MSL	TEMPERATURE DEG K	ERROR DEG K	WIND SPEED M/SEC	ERROR M/SEC	WIND DIRECTION DEGREES	ERROR DEG
33959.2	230.1	0.5	24.6	0.6	267.4	3.0
39547.9	254.2	0.8	74.5	0.8	266.6	1.3
43756.1	270.8	1.2	92.8	1.2	256.9	1.5
47244.3	275.2	1.3	84.8	1.4	254.3	1.9
50654.2	279.0	1.3	68.2	1.5	264.6	2.5
53976.3	264.2	1.1	54.7	1.6	241.6	2.9
57211.7	248.5	1.2	63.1	1.7	251.2	2.9
60365.5	246.5	1.2	77.4	1.8	267.4	2.5
63906.6	233.7	0.9	81.8	1.4	263.8	1.9
67800.2	216.0	1.0	76.6	2.3	297.1	1.9
71538.0	239.3	1.3	53.5	1.7	254.0	3.7
75149.4	244.8	1.4	90.4	1.9	260.0	2.3
78592.2	213.4	2.0	67.8	3.1	260.4	4.8
81459.1	185.5	2.7	56.9	4.8	252.9	9.0
83817.7	214.3	3.1	44.1	7.5	305.3	9.4
86092.2	223.4	3.5	36.0	8.8	24.5	10.9
88283.0	204.2	3.4	26.1	5.1	73.1	22.6
90322.1	199.3	5.3	54.2	14.1	204.9	12.3



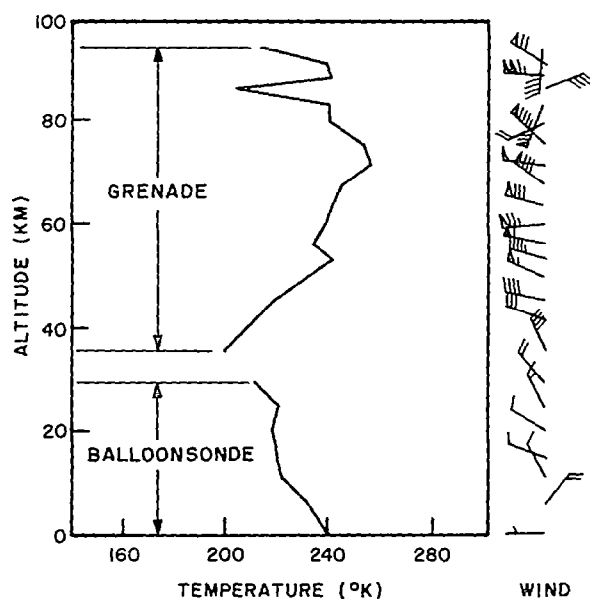
ALTITUDE M MSL	TEMPERATURE DEG K	PRESSURE NT/SQ M	DEVIATION PER CENT	DENSITY KG/CU M	DEVIATION PER CENT
34000	230.2	0.625E 03	-5.7	0.946E-02	-4.3
35000	234.6	0.540E 03	-6.0	0.801E-02	-5.2
36000	238.9	0.466E 03	-6.4	0.679E-02	-6.3
37000	243.2	0.402E 03	-7.0	0.576E-02	-7.5
38000	247.5	0.352E 03	-6.6	0.495E-02	-7.6
39000	251.8	0.308E 03	-6.1	0.426E-02	-7.8
40000	256.0	0.270E 03	-5.9	0.367E-02	-8.0
41000	259.9	0.236E 03	-5.7	0.317E-02	-8.2
42000	263.9	0.207E 03	-5.7	0.273E-02	-8.6
43000	267.9	0.183E 03	-5.1	0.237E-02	-8.4
44000	271.2	0.161E 03	-4.6	0.207E-02	-8.0
45000	272.4	0.142E 03	-4.2	0.182E-02	-7.1
46000	273.7	0.126E 03	-3.9	0.160E-02	-6.3
47000	274.9	0.111E 03	-3.6	0.141E-02	-5.4
48000	276.0	0.988E 02	-3.4	0.124E-02	-5.3
49000	277.1	0.874E 02	-3.1	0.109E-02	-5.4
50000	278.2	0.775E 02	-2.8	0.970E-03	-5.4
51000	277.4	0.687E 02	-2.4	0.863E-03	-4.8
52000	273.0	0.609E 02	-2.0	0.777E-03	-2.9
53000	268.5	0.537E 02	-2.1	0.697E-03	-1.7
54000	264.0	0.473E 02	-2.3	0.624E-03	-1.0
55000	259.2	0.417E 02	-2.3	0.560E-03	-0.0
56000	254.3	0.366E 02	-2.7	0.501E-03	0.8
57000	249.5	0.320E 02	-3.4	0.446E-03	1.2
58000	248.0	0.279E 02	-4.0	0.392E-03	0.5
59000	247.3	0.244E 02	-4.5	0.344E-03	-0.5
60000	246.7	0.213E 02	-5.0	0.301E-03	-1.5
61000	244.2	0.186E 02	-5.4	0.265E-03	-1.7
62000	240.6	0.162E 02	-5.8	0.235E-03	-1.7
63000	237.0	0.140E 02	-6.6	0.206E-03	-2.6
64000	233.3	0.122E 02	-7.2	0.182E-03	-3.3
65000	228.8	0.105E 02	-7.6	0.161E-03	-3.3
66000	224.2	0.915E 01	-7.9	0.142E-03	-3.3
67000	219.6	0.784E 01	-8.9	0.124E-03	-4.0
68000	217.2	0.671E 01	-9.7	0.107E-03	-5.5
69000	223.5	0.575E 01	-10.3	0.897E-04	-10.2
70000	229.7	0.495E 01	-10.2	0.751E-04	-14.2
71000	235.9	0.430E 01	-9.0	0.636E-04	-16.7
72000	240.0	0.374E 01	-7.4	0.543E-04	-18.3
73000	241.5	0.325E 01	-5.6	0.470E-04	-18.7
74000	243.1	0.284E 01	-3.2	0.407E-04	-18.8
75000	244.6	0.247E 01	-0.4	0.353E-04	-18.5
76000	237.1	0.216E 01	2.8	0.318E-04	-14.8
77000	227.9	0.189E 01	6.3	0.288E-04	-10.2
78000	218.8	0.161E 01	8.4	0.256E-04	-6.5
79000	209.4	0.138E 01	10.9	0.229E-04	-2.2
80000	199.7	0.118E 01	13.9	0.206E-04	3.0
81000	190.0	0.993E 00	15.2	0.182E-04	9.5
82000	192.1	0.830E 00	15.7	0.150E-04	8.8
83000	204.3	0.699E 00	17.3	0.119E-04	3.6
84000	215.0	0.599E 00	20.8	0.970E-05	1.4
85000	219.0	0.513E 00	24.3	0.815E-05	2.5
86000	223.0	0.442E 00	28.8	0.690E-05	4.3
87000	215.4	0.381E 00	33.5	0.616E-05	11.9
88000	206.7	0.324E 00	36.8	0.547E-05	19.5
89000	202.5	0.276E 00	39.7	0.475E-05	24.6
90000	200.1	0.234E 00	42.4	0.407E-05	28.5

FIGURE 33

CHURCHILL, 13 DECEMBER 1968, 0311 GMT.

ALTITUDE M MSL	TEMPERATURE DEG K	ERROR DEG K	WIND SPEED M/SEC	ERROR M/SEC	WIND DIRECTION DEGREES	ERROR DEG
35462.0	200.6	0.5	41.1	1.2	338.0	1.7
41369.0	211.6	0.2	30.4	0.7	291.9	1.6
45816.5	218.4	0.8	40.3	2.8	282.6	4.1
49531.4	230.6	1.0	52.9	3.3	294.4	3.8
53147.8	241.6	0.9	46.4	3.2	286.7	4.1
56667.3	234.8	1.0	61.4	3.5	281.8	3.4
60112.6	238.9	1.8	76.5	6.6	266.5	4.9
63471.0	241.2	3.9	79.1	14.0	285.9	10.2
67244.6	245.7	3.4	81.7	12.0	308.2	8.5
71394.7	256.3	2.5	48.4	8.8	276.9	10.4
75385.3	253.6	1.4	84.4	5.2	314.3	3.6
79246.7	239.4	3.2	17.6	12.9	244.9	41.2
82935.6	239.5	3.4	68.4	14.1	202.4	11.2
86014.3	204.1	2.7	41.8	12.9	69.4	18.0
88548.6	241.1	5.3	116.4	22.0	275.9	10.4
90992.1	238.9	4.5	59.5	17.7	304.4	17.1
94396.6	211.8	4.5	43.4	20.7	182.7	26.8

WIND COMPONENTS M/SEC



ALTITUDE M MSL	SOUTH COMPONENT	WEST COMPONENT
37000	-31.2	18.7
39000	-22.1	23.1
41000	-13.4	27.4
43000	-10.4	32.3
45000	-9.3	37.2
47000	-13.0	42.1
49000	-19.7	46.7
51000	-18.4	46.6
53000	-14.1	45.6
55000	-12.9	52.7
57000	-10.4	61.7
59000	-0.9	71.1
61000	-2.4	76.3
63000	-18.0	75.9
65000	-33.4	71.2
67000	-46.1	64.8
69000	-31.6	57.3
71000	-12.3	50.2
73000	-27.2	53.0
75000	-51.0	57.7
77000	-31.2	41.8
79000	2.9	20.8
81000	33.9	20.8
83000	52.7	19.5
85000	10.9	-17.6
87000	-13.6	21.0
89000	-16.8	96.8
91000	-25.7	52.3
93000	11.8	21.3

LEGEND

- 5 M/SEC OR LESS
- 10 M/SEC
- ▲ 50 M/SEC
- DIRECTION OF NORTH WIND ↓

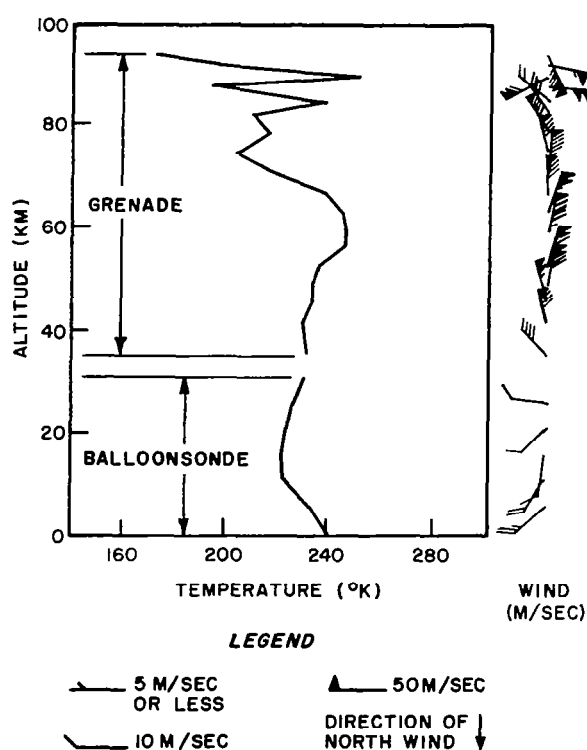
ALTITUDE M MSL	TEMPERATURE DEG K	PRESSURE NT/SQ M	DEVIATION PER CENT	DENSITY KG/CU M	DEVIATION PER CENT
36000	201.6	0.408E 03	-18.0	0.706E-02	-2.6
37000	203.4	0.345E 03	-20.2	0.591E-02	-5.1
38000	205.3	0.291E 03	-22.6	0.494E-02	-7.8
39000	207.2	0.246E 03	-24.8	0.415E-02	-10.2
40000	209.0	0.210E 03	-26.6	0.350E-02	-12.2
41000	210.9	0.179E 03	-28.5	0.296E-02	-14.2
42000	212.6	0.153E 03	-30.4	0.250E-02	-16.2
43000	214.1	0.130E 03	-32.4	0.212E-02	-18.3
44000	215.6	0.111E 03	-34.3	0.179E-02	-20.4
45000	217.1	0.953E 02	-36.0	0.152E-02	-22.1
46000	219.0	0.817E 02	-37.7	0.129E-02	-24.1
47000	222.3	0.700E 02	-39.5	0.109E-02	-26.7
48000	225.6	0.601E 02	-41.1	0.929E-03	-29.4
49000	228.8	0.520E 02	-42.4	0.791E-03	-31.9
50000	232.0	0.449E 02	-43.6	0.674E-03	-34.3
51000	235.1	0.388E 02	-44.8	0.575E-03	-36.5
52000	238.1	0.337E 02	-45.8	0.492E-03	-38.4
53000	241.2	0.293E 02	-46.6	0.423E-03	-40.3
54000	240.0	0.255E 02	-47.3	0.370E-03	-41.3
55000	238.0	0.221E 02	-48.0	0.324E-03	-42.0
56000	236.1	0.192E 02	-48.9	0.283E-03	-42.9
57000	235.2	0.166E 02	-49.6	0.246E-03	-44.0
58000	236.4	0.144E 02	-50.4	0.212E-03	-45.5
59000	237.6	0.125E 02	-50.9	0.183E-03	-46.8
60000	238.7	0.108E 02	-51.4	0.159E-03	-48.0
61000	239.5	0.947E 01	-51.8	0.137E-03	-49.0
62000	240.2	0.823E 01	-52.2	0.119E-03	-50.1
63000	240.9	0.716E 01	-52.4	0.103E-03	-51.2
64000	241.8	0.623E 01	-52.5	0.897E-04	-52.3
65000	243.0	0.542E 01	-52.6	0.777E-04	-53.3
66000	244.2	0.473E 01	-52.3	0.675E-04	-54.1
67000	245.4	0.413E 01	-52.0	0.586E-04	-54.7
68000	247.6	0.360E 01	-51.5	0.507E-04	-55.5
69000	250.2	0.314E 01	-51.0	0.437E-04	-56.2
70000	252.7	0.275E 01	-50.0	0.379E-04	-56.6
71000	255.3	0.241E 01	-48.9	0.329E-04	-56.8
72000	255.9	0.212E 01	-47.6	0.288E-04	-56.6
73000	255.3	0.186E 01	-46.0	0.254E-04	-56.0
74000	254.6	0.163E 01	-44.3	0.223E-04	-55.4
75000	253.9	0.143E 01	-42.4	0.196E-04	-54.6
76000	251.4	0.125E 01	-40.3	0.173E-04	-53.4
77000	247.7	0.110E 01	-37.8	0.154E-04	-51.7
78000	244.0	0.960E 00	-35.4	0.137E-04	-50.1
79000	240.3	0.835E 00	-32.8	0.121E-04	-48.4
80000	239.5	0.726E 00	-29.9	0.105E-04	-47.1
81000	239.5	0.632E 00	-26.6	0.919E-05	-44.6
82000	239.5	0.550E 00	-23.2	0.800E-05	-42.1
83000	238.8	0.478E 00	-19.6	0.698E-05	-39.2
84000	227.3	0.416E 00	-15.9	0.638E-05	-33.1
85000	215.8	0.360E 00	-12.6	0.581E-05	-26.9
86000	204.3	0.305E 00	-10.8	0.521E-05	-21.1
87000	218.5	0.259E 00	-9.0	0.413E-05	-24.7
88000	233.1	0.224E 00	-5.3	0.335E-05	-26.6
89000	240.7	0.195E 00	-0.9	0.283E-05	-25.6
90000	239.8	0.170E 00	3.7	0.247E-05	-21.8
91000	238.8	0.148E 00	8.3	0.216E-05	-16.7
92000	230.9	0.129E 00	12.8	0.194E-05	-8.7
93000	222.9	0.110E 00	15.4	0.173E-05	-1.8
94000	215.0	0.946E-01	17.3	0.153E-05	5.1

FIGURE 34

BARROW, 13 DECEMBER 1968, 0459 GMT.

ALTITUDE M MSL	TEMPERATURE DEG K	ERROR DEG K	WIND SPEED M/SEC	ERROR M/SEC	WIND DIRECTION DEGREES	ERROR DEG
35077.7	231.7	0.2	42.3	0.6	318.9	0.9
40865.0	230.2	1.2	79.6	3.9	347.1	2.7
45229.0	233.4	2.1	102.9	7.0	358.8	3.6
48872.7	233.8	2.0	118.2	6.7	9.4	3.0
52422.9	236.4	1.7	111.7	5.5	16.4	2.6
55871.9	246.4	1.5	96.0	4.7	18.1	2.6
59242.0	246.9	2.4	96.9	7.7	12.2	4.2
62513.6	245.2	3.6	104.8	11.3	18.0	5.7
66195.1	238.9	3.7	81.0	11.5	357.1	7.6
70270.3	216.0	3.5	95.7	12.0	4.2	6.6
74183.1	203.6	2.6	78.5	9.1	347.5	6.3
77946.2	217.0	1.9	91.0	6.1	330.4	3.7
81570.1	210.8	2.7	41.6	7.1	327.7	14.1
84607.0	238.4	6.2	20.9	16.0	312.0	49.8
87094.1	195.1	4.8	99.1	14.3	93.7	9.2
89496.1	250.9	9.8	110.1	26.4	242.1	13.0
91813.8	197.5	7.8	56.4	24.2	101.4	26.0
93985.1	173.7	9.3	124.8	32.1	153.9	16.0

WIND COMPONENTS M/SEC



ALTITUDE M MSL	SOUTH COMPONENT	WEST COMPONENT
37000	-47.1	24.4
39000	-62.9	20.9
41000	-78.0	16.8
43000	-89.9	10.0
45000	-101.2	2.5
47000	-109.5	-8.3
49000	-115.1	-19.3
51000	-110.9	-26.7
53000	-104.4	-31.2
55000	-95.3	-30.3
57000	-92.4	-26.8
59000	-94.5	-22.1
61000	-97.3	-27.0
63000	-96.7	-26.8
65000	-87.0	-7.8
67000	-83.8	1.6
69000	-90.9	-3.7
71000	-91.8	-2.5
73000	-82.3	9.5
75000	-77.2	22.9
77000	-78.5	37.8
79000	-66.4	38.3
81000	-42.3	26.0
83000	-25.2	19.1
85000	-10.6	-6.5
87000	7.8	-68.3
89000	39.8	47.4
91000	25.9	-1.1

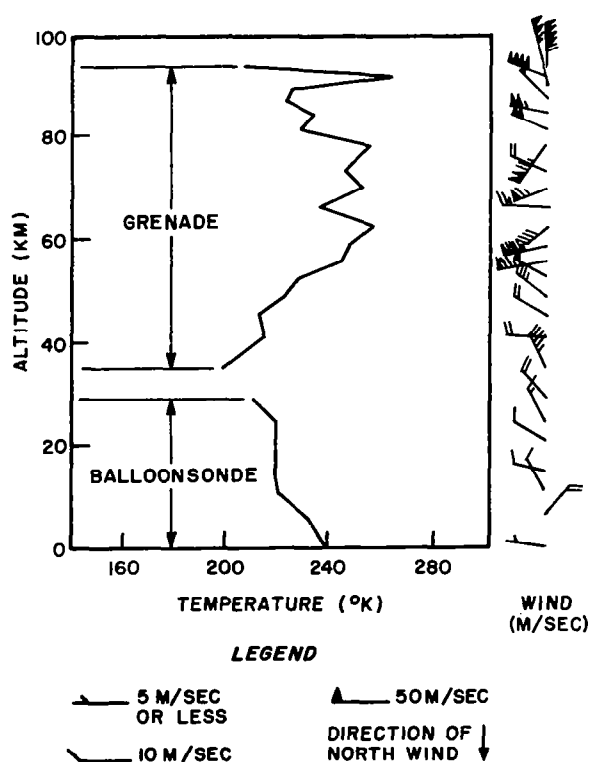
ALTITUDE M MSL	TEMPERATURE DEG K	PRESSURE NT/SQ M	DEVIATION PER CENT	DENSITY KG/CU M	DEVIATION PER CENT
36000	231.4	0.462E 03	-7.2	0.695E-02	-4.1
37000	231.2	0.399E 03	-7.7	0.601E-02	-3.4
38000	230.9	0.345E 03	-8.4	0.520E-02	-2.9
39000	230.7	0.298E 03	-9.3	0.450E-02	-2.7
40000	230.5	0.257E 03	-10.3	0.389E-02	-2.6
41000	230.3	0.222E 03	-11.4	0.336E-02	-2.7
42000	231.1	0.191E 03	-12.7	0.289E-02	-3.3
43000	231.8	0.165E 03	-14.0	0.249E-02	-4.1
44000	232.5	0.143E 03	-15.4	0.214E-02	-4.9
45000	233.3	0.124E 03	-16.7	0.185E-02	-5.7
46000	233.5	0.107E 03	-18.2	0.160E-02	-6.5
47000	233.6	0.929E 02	-19.8	0.138E-02	-7.4
48000	233.7	0.804E 02	-21.3	0.119E-02	-8.9
49000	233.9	0.696E 02	-22.9	0.103E-02	-10.8
50000	234.6	0.602E 02	-24.4	0.895E-03	-12.8
51000	235.4	0.522E 02	-25.8	0.772E-03	-14.7
52000	236.1	0.452E 02	-27.2	0.668E-03	-16.5
53000	238.1	0.392E 02	-28.5	0.574E-03	-19.0
54000	241.0	0.340E 02	-29.7	0.492E-03	-22.0
55000	243.9	0.296E 02	-30.5	0.424E-03	-24.3
56000	246.4	0.259E 02	-31.2	0.366E-03	-26.4
57000	246.6	0.226E 02	-31.7	0.319E-03	-27.6
58000	246.7	0.197E 02	-32.3	0.278E-03	-28.7
59000	246.9	0.172E 02	-32.7	0.242E-03	-29.7
60000	246.5	0.150E 02	-33.1	0.212E-03	-30.6
61000	246.0	0.131E 02	-33.4	0.185E-03	-31.3
62000	245.5	0.114E 02	-33.7	0.162E-03	-32.1
63000	244.4	0.997E 01	-33.8	0.142E-03	-33.1
64000	242.7	0.869E 01	-33.8	0.124E-03	-33.7
65000	240.9	0.756E 01	-33.9	0.109E-03	-34.4
66000	239.2	0.657E 01	-33.8	0.956E-04	-34.9
67000	234.4	0.571E 01	-33.6	0.848E-04	-34.5
68000	228.8	0.496E 01	-33.3	0.755E-04	-33.6
69000	223.2	0.426E 01	-33.5	0.666E-04	-33.3
70000	217.5	0.365E 01	-33.7	0.585E-04	-33.1
71000	213.7	0.313E 01	-33.8	0.510E-04	-33.2
72000	210.6	0.268E 01	-33.7	0.443E-04	-33.3
73000	207.4	0.228E 01	-33.9	0.383E-04	-33.7
74000	204.2	0.193E 01	-34.1	0.330E-04	-34.1
75000	206.6	0.164E 01	-34.0	0.277E-04	-36.0
76000	210.1	0.139E 01	-33.7	0.231E-04	-38.1
77000	213.7	0.119E 01	-32.6	0.194E-04	-39.3
78000	216.9	0.102E 01	-31.1	0.164E-04	-40.2
79000	215.2	0.877E 00	-29.4	0.142E-04	-39.5
80000	213.5	0.752E 00	-27.4	0.122E-04	-38.6
81000	211.8	0.642E 00	-25.5	0.105E-04	-36.4
82000	214.7	0.548E 00	-23.5	0.888E-05	-35.6
83000	223.8	0.467E 00	-21.5	0.728E-05	-36.6
84000	232.9	0.404E 00	-18.4	0.604E-05	-36.7
85000	231.6	0.351E 00	-14.7	0.528E-05	-33.5
86000	214.2	0.304E 00	-11.2	0.495E-05	-25.1
87000	196.8	0.256E 00	-10.0	0.454E-05	-17.4
88000	216.2	0.216E 00	-8.8	0.348E-05	-23.8
89000	239.4	0.187E 00	-5.1	0.272E-05	-28.4
90000	239.3	0.164E 00	-0.1	0.238E-05	-24.6
91000	216.3	0.142E 00	3.7	0.228E-05	-11.9
92000	195.5	0.120E 00	4.8	0.213E-05	0.1
93000	184.5	0.101E 00	5.5	0.191E-05	8.5

FIGURE 35

CHURCHILL, 13 DECEMBER 1968, 0511 GMT.

ALTITUDE M MSL	TEMPERATURE DEG K	ERROR DEG K	WIND SPEED M/SEC	ERROR M/SEC	WIND DIRECTION DEGREES	ERROR DEG
35011.0	199.0	0.8	43.5	2.2	334.8	2.8
40749.4	215.6	1.0	22.0	2.8	274.7	8.0
45059.1	213.8	0.5	21.6	1.8	300.5	5.2
48648.1	223.4	2.0	33.6	7.4	307.9	13.1
52146.7	229.4	2.6	49.1	9.7	300.3	11.7
55547.6	245.0	1.8	74.1	6.8	258.9	5.2
58864.6	247.7	2.0	93.6	7.8	261.7	4.6
62102.6	258.4	3.0	38.9	11.0	230.5	15.7
65754.3	237.6	2.5	23.1	10.4	274.2	26.1
69780.0	252.2	2.8	66.5	11.2	250.2	9.4
73657.9	246.2	1.7	21.7	7.2	295.6	19.4
77408.3	254.2	1.4	122.8	6.3	217.5	2.7
80999.0	228.5	2.2	100.9	9.7	293.0	5.4
83981.7	232.9	4.4	105.7	18.7	282.7	9.9
86422.4	223.1	4.4	49.9	19.2	314.2	22.1
88794.2	224.2	6.5	112.6	28.6	354.8	14.6
91082.1	262.7	12.0	200.0	47.9	292.8	13.0
93224.0	205.2	11.0	220.2	52.4	357.2	13.7

WIND COMPONENTS M/SEC



ALTITUDE M MSL	SOUTH COMPONENT	WEST COMPONENT
37000	-26.3	19.7
39000	-13.2	20.9
41000	-3.5	21.5
43000	-6.6	20.2
45000	-10.9	19.3
47000	-16.2	22.8
49000	-20.9	28.3
51000	-23.4	37.1
53000	-15.0	50.0
55000	7.2	67.7
57000	13.8	81.5
59000	14.6	85.3
61000	20.9	51.4
63000	18.2	28.4
65000	3.9	24.7
67000	5.7	35.3
69000	17.6	54.7
71000	12.4	49.0
73000	-2.9	27.6
75000	28.7	39.3
77000	79.9	68.0
79000	36.7	82.8
81000	-28.6	92.4
83000	-28.6	99.7
85000	-28.1	75.0
87000	-54.9	30.2
89000	-101.5	39.5
91000	-96.0	145.0

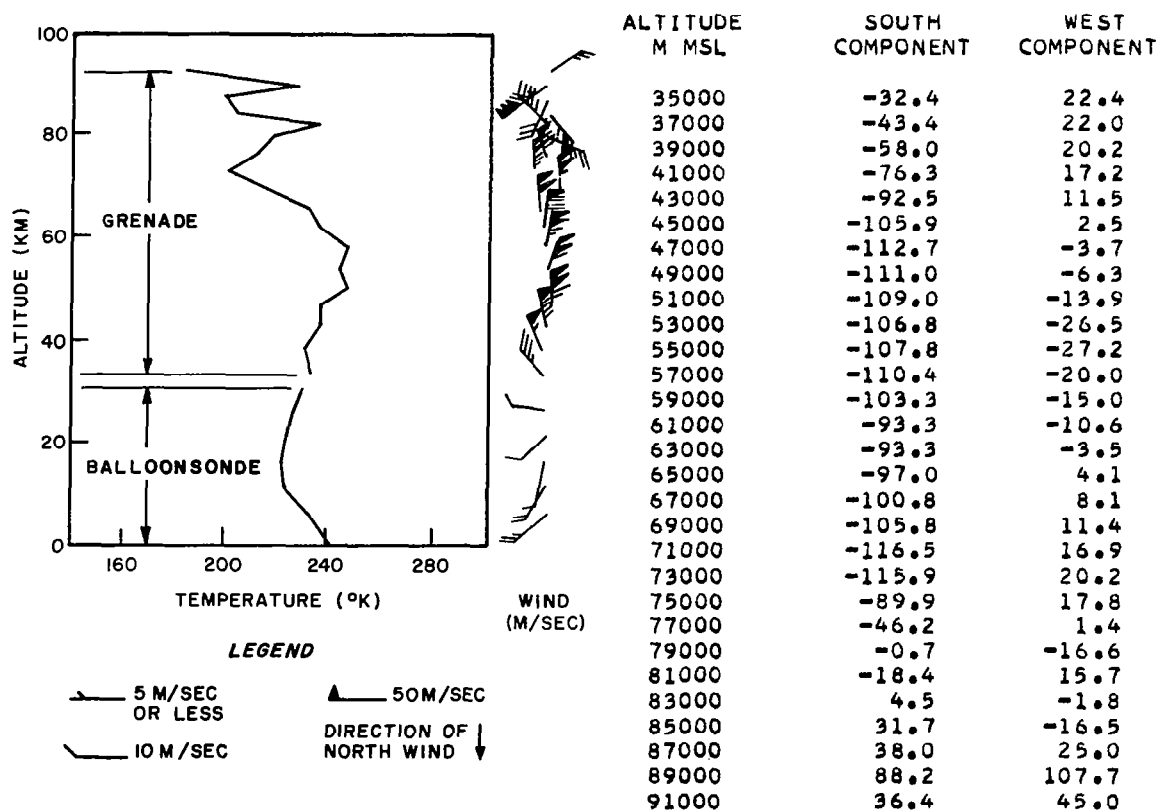
ALTITUDE M MSL	TEMPERATURE DEG K	PRESSURE NT/SQ M	DEVIATION PER CENT	DENSITY KG/CU M	DEVIATION PER CENT
36000	201.9	0.405E 03	-18.7	0.699E-02	-3.6
37000	204.8	0.341E 03	-21.0	0.581E-02	-6.7
38000	207.6	0.288E 03	-23.5	0.483E-02	-9.8
39000	210.5	0.245E 03	-25.2	0.406E-02	-12.0
40000	213.4	0.210E 03	-26.7	0.343E-02	-14.1
41000	215.5	0.179E 03	-28.4	0.290E-02	-15.9
42000	215.1	0.153E 03	-30.1	0.248E-02	-16.8
43000	214.6	0.131E 03	-31.8	0.213E-02	-17.9
44000	214.2	0.112E 03	-33.7	0.182E-02	-19.1
45000	213.8	0.959E 02	-35.6	0.156E-02	-20.5
46000	216.3	0.818E 02	-37.6	0.131E-02	-23.0
47000	219.0	0.700E 02	-39.5	0.111E-02	-25.5
48000	221.6	0.602E 02	-41.1	0.946E-03	-28.1
49000	224.0	0.517E 02	-42.6	0.805E-03	-30.7
50000	225.7	0.445E 02	-44.1	0.687E-03	-33.0
51000	227.4	0.384E 02	-45.4	0.588E-03	-35.1
52000	229.1	0.331E 02	-46.7	0.504E-03	-37.0
53000	233.3	0.286E 02	-47.8	0.427E-03	-39.8
54000	237.9	0.247E 02	-48.9	0.362E-03	-42.5
55000	242.5	0.215E 02	-49.4	0.310E-03	-44.6
56000	245.4	0.188E 02	-50.0	0.267E-03	-46.2
57000	246.2	0.164E 02	-50.4	0.232E-03	-47.3
58000	247.0	0.143E 02	-50.8	0.202E-03	-48.3
59000	248.1	0.125E 02	-51.1	0.175E-03	-49.2
60000	251.4	0.109E 02	-51.3	0.151E-03	-50.5
61000	254.7	0.956E 01	-51.4	0.130E-03	-51.6
62000	258.0	0.840E 01	-51.2	0.113E-03	-52.6
63000	253.3	0.738E 01	-51.0	0.101E-03	-52.2
64000	247.6	0.646E 01	-50.8	0.908E-04	-51.7
65000	241.9	0.561E 01	-50.9	0.807E-04	-51.5
66000	238.5	0.487E 01	-50.9	0.711E-04	-51.6
67000	242.1	0.423E 01	-50.8	0.608E-04	-53.0
68000	245.8	0.368E 01	-50.5	0.521E-04	-54.2
69000	249.4	0.322E 01	-49.7	0.450E-04	-54.9
70000	251.9	0.282E 01	-48.8	0.390E-04	-55.3
71000	250.3	0.247E 01	-47.7	0.344E-04	-54.9
72000	248.7	0.216E 01	-46.5	0.303E-04	-54.4
73000	247.2	0.188E 01	-45.2	0.266E-04	-53.9
74000	246.9	0.165E 01	-43.8	0.232E-04	-53.5
75000	249.0	0.144E 01	-42.1	0.201E-04	-53.5
76000	251.2	0.126E 01	-40.1	0.174E-04	-53.2
77000	253.3	0.110E 01	-37.6	0.151E-04	-52.6
78000	250.0	0.969E 00	-34.8	0.135E-04	-50.8
79000	242.8	0.850E 00	-31.6	0.121E-04	-48.0
80000	235.7	0.737E 00	-28.8	0.108E-04	-45.4
81000	228.5	0.637E 00	-26.0	0.971E-05	-41.5
82000	230.0	0.550E 00	-23.1	0.834E-05	-39.6
83000	231.4	0.476E 00	-20.0	0.717E-05	-37.6
84000	232.8	0.412E 00	-16.7	0.617E-05	-35.3
85000	228.8	0.358E 00	-13.1	0.545E-05	-31.4
86000	224.8	0.308E 00	-10.0	0.478E-05	-27.6
87000	223.3	0.265E 00	-6.8	0.414E-05	-24.6
88000	223.8	0.229E 00	-3.4	0.356E-05	-22.1
89000	227.7	0.197E 00	-0.0	0.302E-05	-20.7
90000	244.5	0.170E 00	3.7	0.242E-05	-23.3
91000	261.3	0.150E 00	9.7	0.200E-05	-22.8
92000	238.0	0.132E 00	15.8	0.194E-05	-9.2
93000	211.2	0.113E 00	18.2	0.187E-05	6.1

FIGURE 36

BARROW, 13 DECEMBER 1968, 0659 GMT.

ALTITUDE M MSL	TEMPERATURE DEG K	ERROR DEG K	WIND SPEED M/SEC	ERROR M/SEC	WIND DIRECTION DEGREES	ERROR DEG
33781.2	232.7	0.7	34.2	2.0	318.4	3.5
38024.7	230.1	1.3	53.7	3.6	336.1	3.8
42119.2	236.0	1.9	88.0	5.5	349.8	3.4
46135.0	236.1	3.9	113.6	10.9	1.3	5.1
50000.3	246.0	2.6	110.3	7.0	3.9	3.4
53776.5	243.2	1.4	110.5	3.8	16.6	1.8
57425.3	246.7	2.2	113.2	5.9	9.3	2.7
61422.0	236.5	2.5	91.0	6.8	6.2	4.0
65242.7	231.8	3.9	97.6	10.3	356.7	5.6
68904.5	215.6	5.1	105.0	14.3	354.0	7.2
72408.2	200.7	4.2	126.4	12.3	350.3	5.1
75811.6	211.3	3.9	81.0	10.1	347.8	6.7
79031.6	218.4	4.8	27.1	10.9	112.0	24.6
81652.9	234.9	7.4	42.9	16.7	313.3	22.2
84152.4	203.0	5.6	45.2	13.7	138.2	18.7
86879.0	199.4	5.8	30.6	15.5	204.9	28.2
89457.5	227.7	7.2	175.2	17.9	231.8	5.3
92093.1	184.4	3.8	25.1	10.8	55.2	24.2

WIND COMPONENTS M/SEC



ALTITUDE M MSL	TEMPERATURE DEG K	PRESSURE NT/SQ M	DEVIATION PER CENT	DENSITY KG/CU M	DEVIATION PER CENT
34000	232.5	0.621E 03	-6.3	0.930E-02	-5.9
35000	231.9	0.537E 03	-6.5	0.806E-02	-4.7
36000	231.3	0.464E 03	-6.8	0.699E-02	-3.6
37000	230.7	0.400E 03	-7.4	0.605E-02	-2.9
38000	230.1	0.346E 03	-8.2	0.524E-02	-2.3
39000	231.5	0.298E 03	-9.1	0.449E-02	-2.8
40000	232.9	0.258E 03	-10.0	0.386E-02	-3.3
41000	234.4	0.223E 03	-10.8	0.332E-02	-3.7
42000	235.8	0.193E 03	-11.8	0.286E-02	-4.3
43000	236.0	0.168E 03	-12.9	0.248E-02	-4.5
44000	236.0	0.145E 03	-14.0	0.214E-02	-4.8
45000	236.1	0.126E 03	-15.3	0.186E-02	-5.2
46000	236.1	0.109E 03	-16.6	0.161E-02	-5.8
47000	238.3	0.948E 02	-18.1	0.138E-02	-7.3
48000	240.9	0.823E 02	-19.5	0.119E-02	-9.6
49000	243.4	0.717E 02	-20.5	0.102E-02	-11.6
50000	246.0	0.625E 02	-21.5	0.886E-03	-13.7
51000	245.3	0.545E 02	-22.5	0.775E-03	-14.5
52000	244.5	0.476E 02	-23.5	0.678E-03	-15.3
53000	243.8	0.414E 02	-24.5	0.592E-03	-16.6
54000	243.4	0.361E 02	-25.5	0.516E-03	-18.1
55000	244.4	0.314E 02	-26.4	0.448E-03	-20.1
56000	245.3	0.274E 02	-27.2	0.389E-03	-21.7
57000	246.3	0.239E 02	-27.8	0.338E-03	-23.3
58000	245.2	0.208E 02	-28.3	0.296E-03	-24.1
59000	242.7	0.182E 02	-28.8	0.261E-03	-24.4
60000	240.1	0.158E 02	-29.4	0.229E-03	-24.8
61000	237.6	0.137E 02	-30.1	0.201E-03	-25.4
62000	235.8	0.119E 02	-30.8	0.176E-03	-26.3
63000	234.6	0.103E 02	-31.3	0.153E-03	-27.6
64000	233.3	0.896E 01	-31.8	0.133E-03	-28.9
65000	232.1	0.775E 01	-32.2	0.116E-03	-30.1
66000	228.4	0.671E 01	-32.4	0.102E-03	-30.4
67000	224.0	0.581E 01	-32.5	0.903E-04	-30.2
68000	219.6	0.498E 01	-33.1	0.789E-04	-30.7
69000	215.2	0.426E 01	-33.5	0.690E-04	-30.9
70000	210.9	0.365E 01	-33.8	0.602E-04	-31.1
71000	206.7	0.311E 01	-34.2	0.524E-04	-31.3
72000	202.4	0.263E 01	-34.9	0.453E-04	-31.8
73000	202.6	0.223E 01	-35.3	0.383E-04	-33.6
74000	205.7	0.188E 01	-35.6	0.319E-04	-36.2
75000	208.8	0.161E 01	-35.2	0.268E-04	-37.9
76000	211.7	0.137E 01	-34.6	0.226E-04	-39.4
77000	213.9	0.117E 01	-33.7	0.191E-04	-40.4
78000	216.1	0.100E 01	-32.4	0.161E-04	-41.0
79000	218.3	0.862E 00	-30.6	0.137E-04	-41.4
80000	224.5	0.740E 00	-28.5	0.114E-04	-42.5
81000	230.8	0.638E 00	-25.9	0.963E-05	-42.0
82000	230.5	0.554E 00	-22.7	0.837E-05	-39.4
83000	217.7	0.478E 00	-19.8	0.764E-05	-33.4
84000	205.0	0.405E 00	-18.1	0.689E-05	-27.9
85000	201.9	0.344E 00	-16.5	0.593E-05	-25.3
86000	200.6	0.291E 00	-14.9	0.506E-05	-23.4
87000	200.7	0.246E 00	-13.4	0.428E-05	-22.1
88000	211.7	0.208E 00	-12.0	0.343E-05	-24.9
89000	222.7	0.179E 00	-9.0	0.281E-05	-26.1
90000	218.8	0.155E 00	-5.4	0.247E-05	-21.9
91000	202.4	0.132E 00	-2.9	0.228E-05	-11.9
92000	186.0	0.111E 00	-3.0	0.207E-05	-2.7